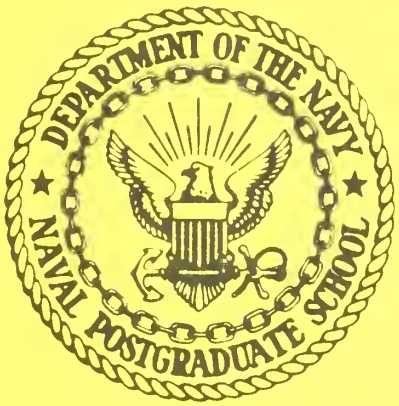
NPS 68-86-007

NAVAL POSTGRADUATE SCHOOL

Monterey, California



MIZLANT 85 DATA REPORT
RESULTS OF AN OCEANOGRAPHIC CRUISE
TO THE GREENLAND SEA

September 1985

Robert H. Bourke, Robert G. Paquette
and Alan M. Weigel

September 1986

Interim Report for Period 1 June 1985-30 September 1986

Approved for public release; distribution unlimited.

Prepared for:
Director, Arctic Submarine Laboratory
Naval Ocean Systems Center
San Diego, CA 92152

FedDocs
D 208.14/2
NPS-68-86-007

FedDocs
D 208.14/2:NPS-68-86-007

NAVAL POSTGRADUATE SCHOOL
Monterey, CA 93943

Rear Admiral R. C. Austin
Superintendent

David A. Schrady
Provost

The work reported herein was supported in part by the Arctic Submarine Laboratory, Naval Ocean Systems Center, San Diego, CA under Work Order N6600186WR00131.

Reproduction of all or part of this report is authorized.

This report was prepared by:

DUDLEY KNOX LIBRARY
NAVAL POSTGRADUATE SCHOOL
MONTEREY CA 93943-5101

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b RESTRICTIVE MARKINGS
2a SECURITY CLASSIFICATION AUTHORITY	3 DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution unlimited
2b DECLASSIFICATION / DOWNGRADING SCHEDULE	
4 PERFORMING ORGANIZATION REPORT NUMBER(S) NPS 68-86-007	5 MONITORING ORGANIZATION REPORT NUMBER(S)
6a NAME OF PERFORMING ORGANIZATION Naval Postgraduate School 6b OFFICE SYMBOL (If applicable) Code 68	7a NAME OF MONITORING ORGANIZATION Arctic Submarine Laboratory
6c. ADDRESS (City, State, and ZIP Code) Monterey, CA 93943	7b ADDRESS (City, State, and ZIP Code) Code 19, Bldg. 371 Naval Ocean Systems Center San Diego, CA 92152
8a NAME OF FUNDING / SPONSORING ORGANIZATION 8b OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER N6600186WR00131
8c. ADDRESS (City, State, and ZIP Code)	10 SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO / PROJECT NO / TASK NO / WORK UNIT ACCESSION NO

11 TITLE (Include Security Classification)
MIZLANT 85 Data Report, Results of an Oceanographic Cruise to the Greenland Sea, September 1985

12 PERSONAL AUTHOR(S)
Bourke, Robert H., Paquette, Robert G., and Weigel, Alan M.

13a TYPE OF REPORT	13b TIME COVERED	14 DATE OF REPORT (Year, Month, Day)	15 PAGE COUNT
Interim	FROM 1 Jun 85 TO 30 Sep 86	September 1986	32 + 72 figures

16 SUPPLEMENTARY NOTATION

17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	East Greenland Current	NORTHWIND
			Greenland Sea	Fram Strait
			Marginal Ice Zone	Yermek Plateau

19 ABSTRACT (Continue on reverse if necessary and identify by block number)

This report presents plots of property profiles for each of the 156 oceanographic stations occupied by the U.S. Coast Guard icebreaker NORTHWIND in the Fram Strait area of the Greenland Sea during September 1985. A Neil Brown Mark III CTD was used to obtain temperature and salinity profiles to the sea floor in shallow water and to at least 600m in deeper water. In addition to temperature and salinity profiles, plots of sound speed and density (sigma-t) are shown.

20 DISTRIBUTION / AVAILABILITY OF ABSTRACT	21 ABSTRACT SECURITY CLASSIFICATION
☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	UNCLASSIFIED
22a NAME OF RESPONSIBLE INDIVIDUAL	22b TELEPHONE (Include Area Code) / 22c OFFICE SYMBOL

*U.S. Government Printing Office: 1985—607-047

MIZLANT 85 DATA REPORT
RESULTS OF AN OCEANOGRAPHIC CRUISE TO THE GREENLAND SEA SEPTEMBER 1985

by

Robert H. Bourke, Robert G. Paquette, and
Alan M. Weigel

I. INTRODUCTION

This report describes the cruise of the Coast Guard ice breaker NORTHWIND (WAGB-282) to the Fram Strait area of the Greenland Sea during September 1985. This cruise has been designated Artic East 1985 (AE85), but for continuity with past cruises is also termed MIZLANT 85. The cruise had several objectives: (a) determine the northward extent of the warm saline, westward branch of the West Spitsbergen Current (WSC), (b) determine the temperature and salinity distribution across Fram Strait in at least two locations (one north of OB Bank, one south of OB Bank), (c) assess the circulation over the Molloy Deep, (d) study the dynamic characteristics of the East Greenland Polar Front (EGPF), between 79^{o} and 81^{o}N, (e) determine the biological properties of the upper portion of the water column (the details of these studies are reported elsewhere), and (f) study the exchange of water between the deep troughs on and off the shelf.

The NORTHWIND track covered approximately 3808 km (2052 miles) during which 158 CTD stations were made in Fram Strait and in the area north of Svalbard. All but two of the CTD stations were conducted from the ship; the other two were made from ice floes using the ship's heliocopters. Prior to departure from Iceland the ship experienced a causualty to the port main motor making the port shaft unusable for the entire cruise. This fact along with heavy ice conditions north of Fram Strait prevented the completion of several planned transects, especially those across the top of Fram Strait to capture the characteristics of the westward flow of WSC water.

II. GENERAL DISCUSSION

The scientific party boarded NORTHWIND between 27 and 30 August 1985 in Reykiavik and Akurery, Iceland. The members of the physical oceanography scientific party and their affiliations are:

Dr. John L. Newton, Polar Research Laboratory, Chief Scientist

Dr. Robert H. Bourke, Naval Postgraduate School

Mr. Kim O. McCoy, Private Consultant to NPS

LT Alan M. Weigel, USN, Student NPS

Also on board were three scientists from the Naval Ocean Systems Center, San Diego who conducted the biological portion of the cruise.

The cruise track and location of CTD stations are indicated in Figure 1. A listing of the location of all CTD stations and ancillary climatological data at each station is shown in Appendix A. The atmospheric pressure, air temperature, and wind speed and direction measured every six hours are shown in Figures 2, 3, and 4. Throughout the cruise the air temperature generally remained at or just below the freezing point. From 15 September to 22 September, a storm passed through the area keeping air temperatures generally below -5^{o} C. This coincided with a decrease in atmospheric pressure which remained below 1010 mb from 15 through 23 September. The wind speed consistently remained above 15 knots except for brief periods of light and variable winds. Winds were predominantly from the north except for the four day period 10-13 September.

A detailed bathymetry of Fram Strait is shown in Figure 5. The bottom contours west of the prime meridian were derived from Perry et al. (1985) while those west of it were taken from Tunnicliffe (1985). The bottom contours were then further refined by incorporating the depths measured at each CTD station during AE85.

III. INSTRUMENTATION

The primary oceanographic instrument was the Neil Brown Instrument Systems (NBIS) Mark III CTD. Data were acquired, stored and displayed using a Hewlett-Packard 9835B computer and a 9872A x-y flat-bed plotter. As in the past, a wire cage was constructed around the base of the CTD to protect the sensors from ice damage. No apparant deviation in sensor accuracy has been noted using this technique.

Prior to lowering the instrument it was flushed by lowering and hoisting over a depth range of 50 m for several minutes to minimize temperature errors caused by stored heat in the body of the instrument. Standardization of the instrument was by means of reversing bottle clamped to the line above the instrument. The resulting samples were analyzed by a portable induction salinometer referenced to standard water. The average differences between the instuments and the standards were approximately 0.01^{o}C in temperature and 0.01 ppt in salinity, not notably greater than the probable error in the thermometer and the deck salinometer measurements.

The calibrated 3200 dbar pressure sensor installed at NPS failed early in the cruise, at Station 18, and was replaced with the 1600 dbar sensor. This reduced

depth capability had no impact on the cruise as no casts were conducted below 1200 m.

The temperature and conductivity sensors of the NBIS CTD were calibrated at NPS prior to the cruise. The mean temperature difference between the standard and the CTD, based on 20 determinations, was 0.006^{o}C, with a standard deviation of 0.001^{o}C. The mean conductivity difference, based on 10 samples at each of 5 salinities, was -0.04 ohm^{-1}cm^{-1}, with a standard deviation of 0.006 ohm^{-1}cm^{-1}. A post-cruise calibration determined that no drift had occurred in temperature sensor accuracy. The mean temperature difference, based on 20 determinations, was again 0.006^{o}C, with a standard deviation of 0.001^{o}C. The post cruise calibration of the conductivity sensor, however, did show some drift. The mean conductivity difference between the standard and the CTD, based on 10 determinations at each of 4 salinities, was -0.01 ohm^{-1}cm^{-1}, with a standard deviation of 0.005 ohm^{-1}cm^{-1}. (At the range of temperatures found during the cruise, a change in conductivity of 0.01 ohm^{-1}cm^{-1} results in a 0.015 ppt change in salinity.) No correction was applied to the raw data, however, because the post cruise calibration was not performed until 6 months after completion of the cruise.

Two lightweight, portable CTD's (Applied Micro Systems, Inc) were used as back-up instruments as well as deployed from the ship's helicopters. A battery-operated, motorized winch was used with this CTD system. Two lowerings were made using the lightweight CTD deployed from a helicopter. Several lowerings were made with the lightweight CTD strapped to the NBIS CTD for intercomparison; the performance of the two systems is quite similar.

At three stations during the cruise the water motion at 40 m and 100 m depth was measured with a Hydro Products current meter. These measurements were made to determine the vertical current shear of the upper layer of the water column and also to adjust the level of no motion of the baroclinically-derived currents. The current meter consisted of a Savonius rotor and a magnetic compass vane system mounted approximately one meter above the NBIS CTD. The analog signal from the current meter system was digitized using a Hewlett-Packard 3412A Data Aquisition System. A HP-71A computer was used to compute and store 10 min averages of current speed and direction. During these current measurement periods, which lasted from 3 to 10 hours, the ship's drift was monitored based on fixes obtained by satellite navigation. The absolute current was determined by vector addition of the ship's motion.

The two embarked helicopters were used extensively in an ice reconnaissance role and, in two places, to extend the sampling area with the lightweight CTD. Forty sorties for ice reconnaissance were flown for a total of 80 flight hours.

IV. ANALYSIS

The West Spitsbergen Current (WSC) is a warm, saline, northward flowing extension of the Norwegian Current System. As seen in Figure 6, a transect across Fram Strait at 78^{O}N, core temperatures for the WSC were in excess of 6^{O}C. This warm core occupies the upper 50 m of the water column and tends to hug the shelf break as it flows north along the west coast of Svalbard. One branch of the current then heads northeast beyond 80^{O}N to eventually enter the Arctic Basin. This can be seen in the transect northwest across the shelf break north of Svalbard (Figure 7). Here the core temperatures have cooled to slightly above 4^{O}C. The second, westward turning branch appears to be partially controlled by the west shoulder of the Yermak Plateau. A longitudinal transect along 2^{O}E shows that the maximum temperature of the westward flowing core lies just outside the ice edge, at station 100 in Figure 8. The absolute northward extent of the westward flowing arm could not be ascertained but probably does not extend much north of 81^{O}N.

We were able to map the joining of this warm current with the cold waters exiting from the Arctic Ocean. The boundary of the exiting Arctic Waters appears to start near the Yermak Plateau continental shelf break and bends southwestward to the Greenland continental shelf break. This is shown in a transect at approximately 80^{O} 30'N (Figure 9). A transition zone, rich in finestructure some 55 to 75 km wide, separates the Arctic water from the warm salty water of the WSC.

A four-day survey was conducted of a cold lens of Polar Water detached from the ice edge near 79^{O} 30'N, 1^{O}W. A transect through this lens (Figure 10) shows the east-west extent, but the north-south extent could not be precisely determined. Hence, it could not be determined that this cold lens actually was completely detached from the East Greenland Current.

V. ACKNOWLEDGEMENTS

We are grateful for the help provided by the officers and men, especially the marine science technicians, of the USCGC NORTHWIND. This work was supported by the Arctic Submarine Laboratory , Naval Ocean Systems Center, San Diego, Ca. under contract numbers N6600185WR00524 and N6600186WR00131.

VI. REFERENCES

Perry, R. K. and H. S. Fleming, Bathymetry of the Arctic Ocean, chart, Naval Research Laboratory, Washington, D. C., 1985.

Tunnicliffe, M. D., An investigation of the waters of the East Greenland Current, Master's Thesis, Naval Postgraduate School, Monterey, Ca., 136 pp., 1985.

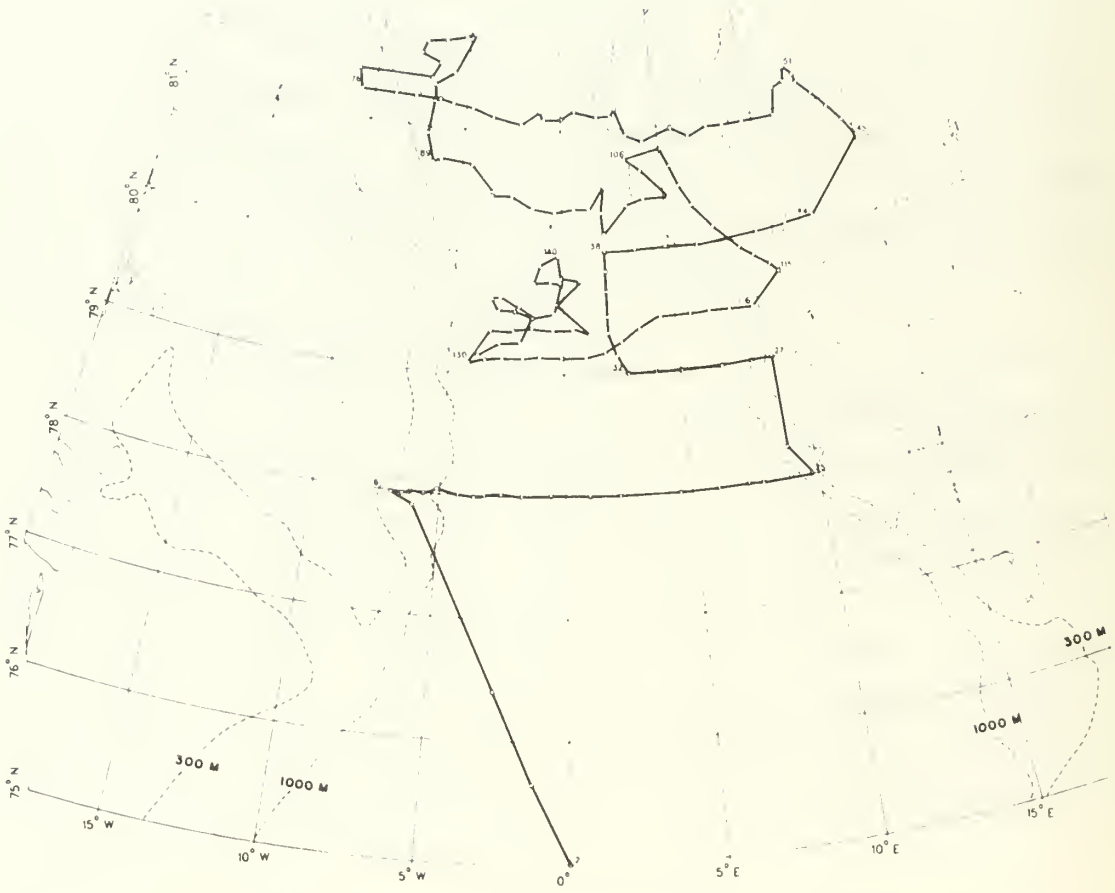


Figure 1. Cruise track and location of CTD stations during MIZLANT 85.

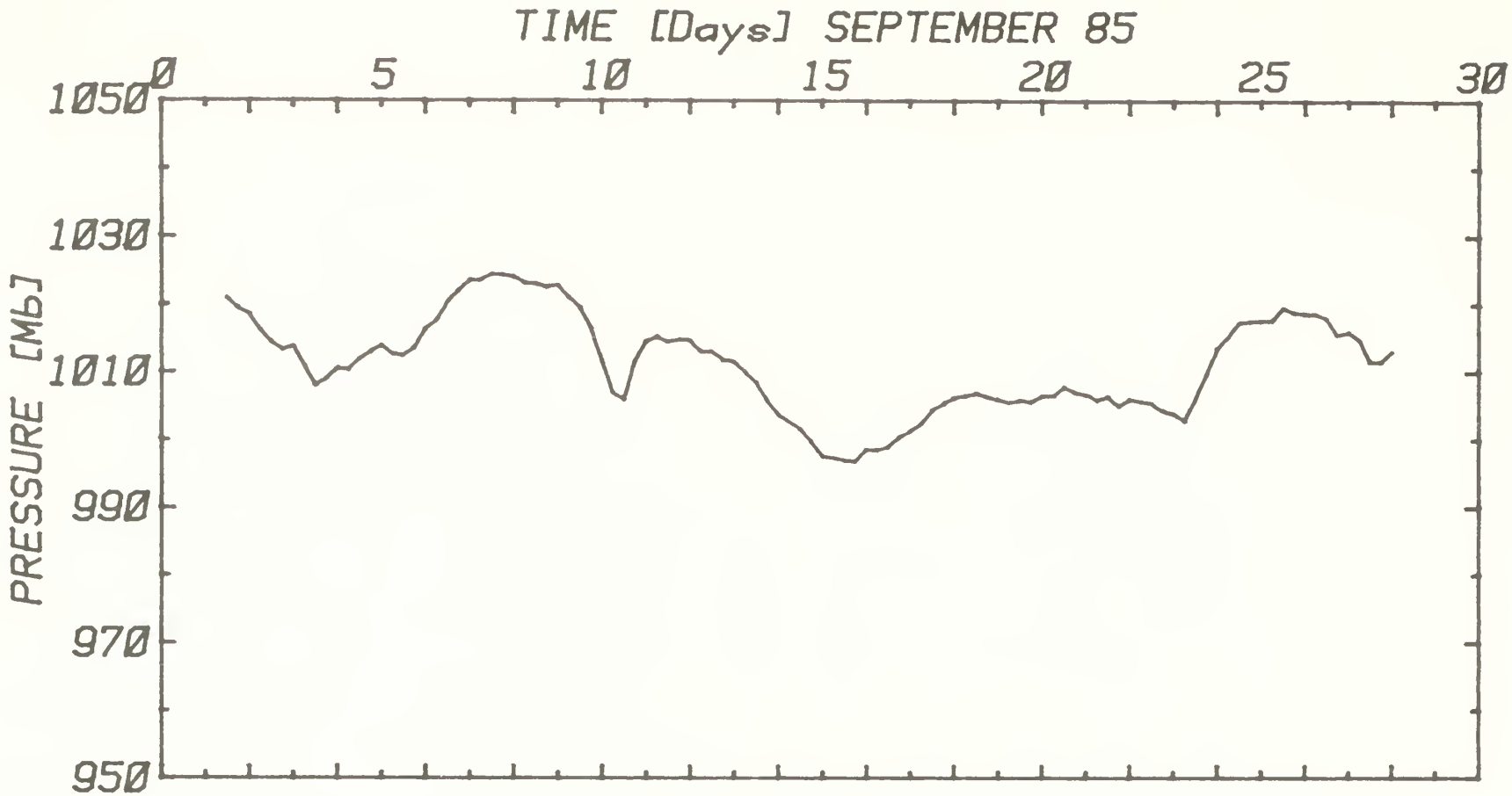


Figure 2. Atmospheric pressure (mbar) at 6-hourly intervals during MLANT 85.

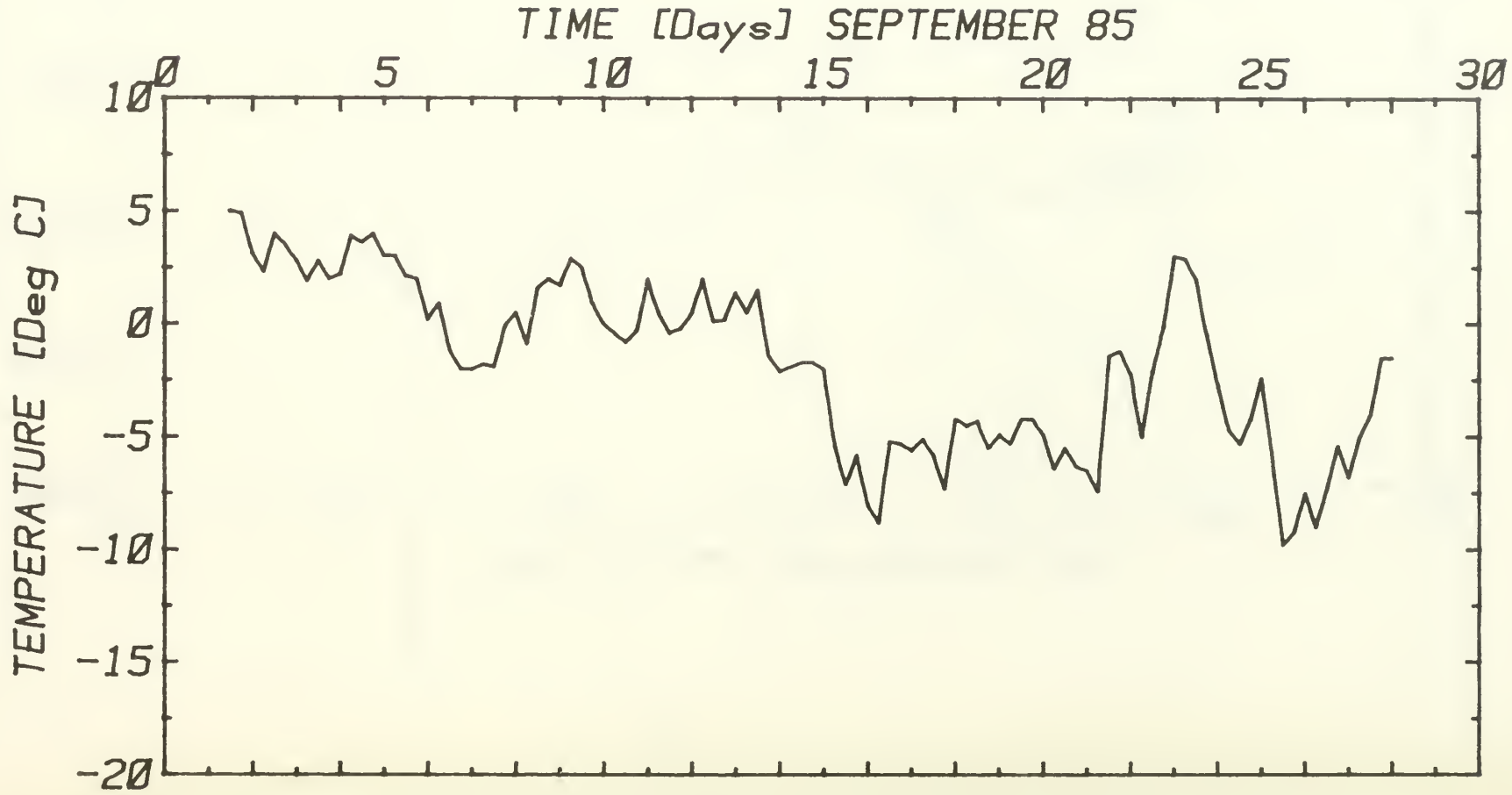


Figure 3. Air temperature (^{O}C) at 6-hourly intervals during MLANT 85.

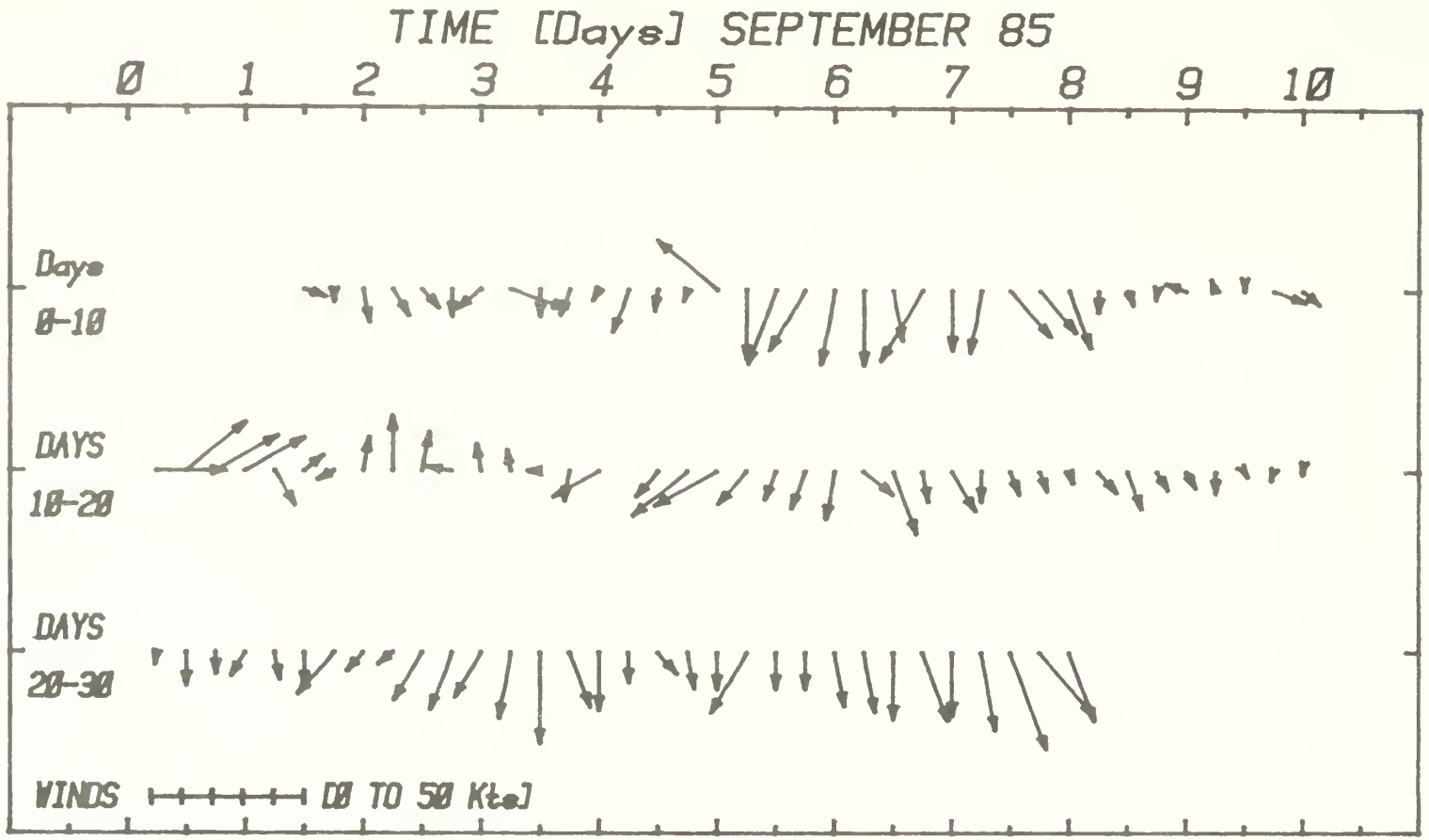


Figure 4. Wind speed (kts) and direction at 6-hourly intervals during MLANT 85.

Figure 5. Bathymetry (meters x 100) of the Fram Strait area based on data from Perry et al. (1985) and Tunnicliffe (1985).

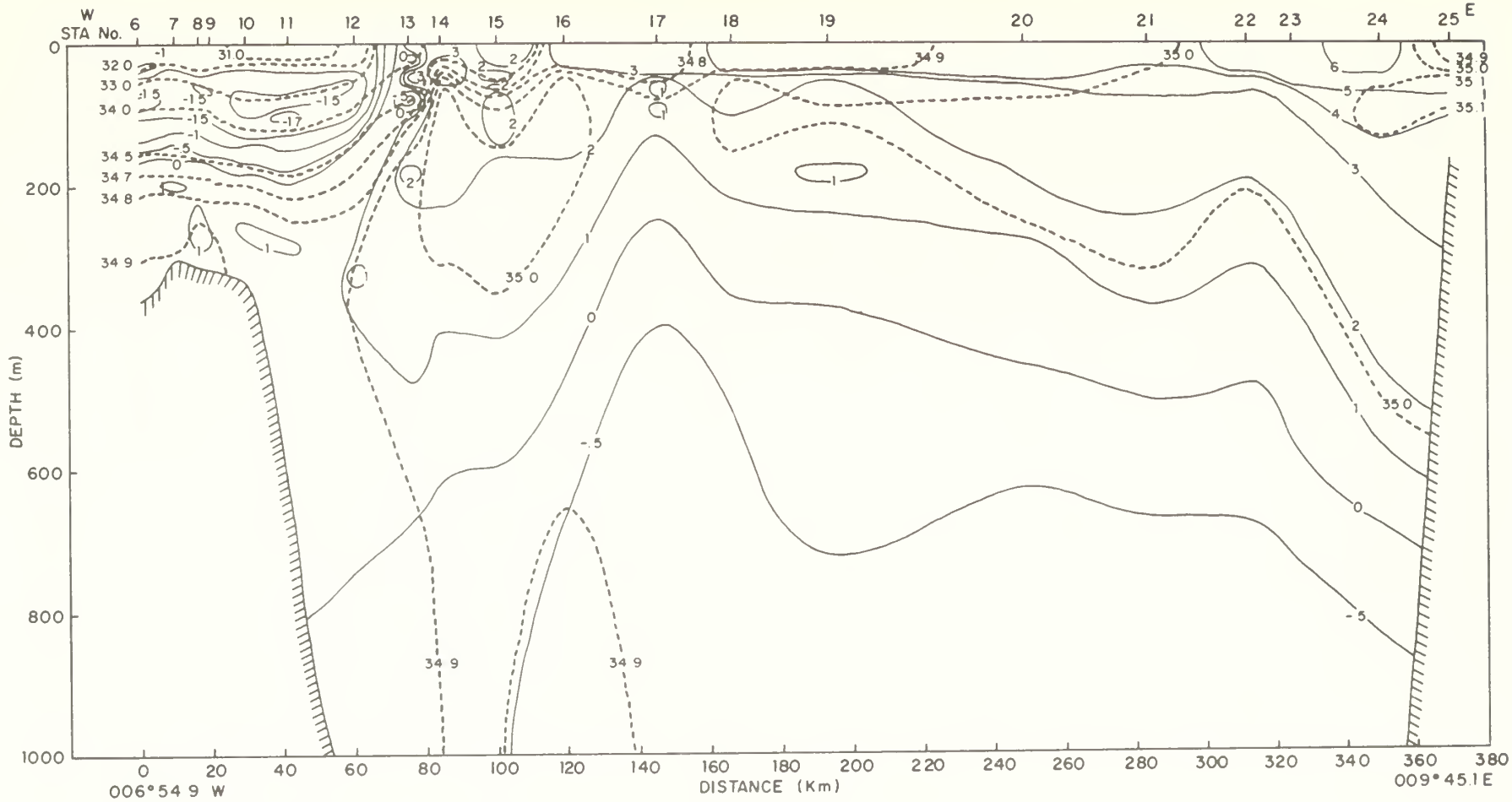


Figure 6. Temperature (solid line) and salinity (dashed line) transect along 78°N. The East Greenland Polar Front is observed near Station 14. The warm (>6°C) West Spitsbergen Current is located between Stations 22 and 25.

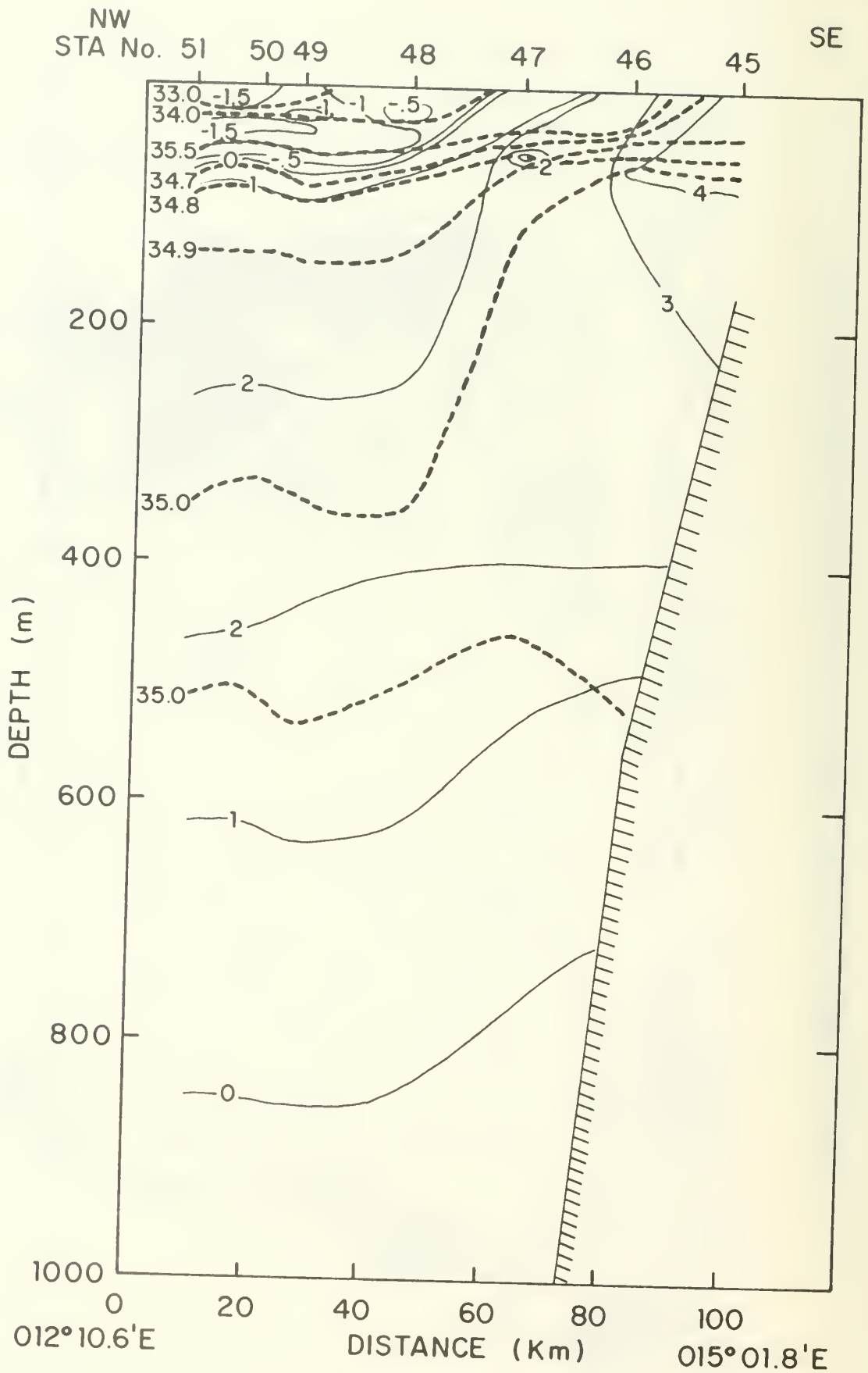


Figure 7. Temperature and salinity transect extending NW from 80.6°N, 15°E. The WSC, now cooled to just above 4°C, is observed to hug the coast.

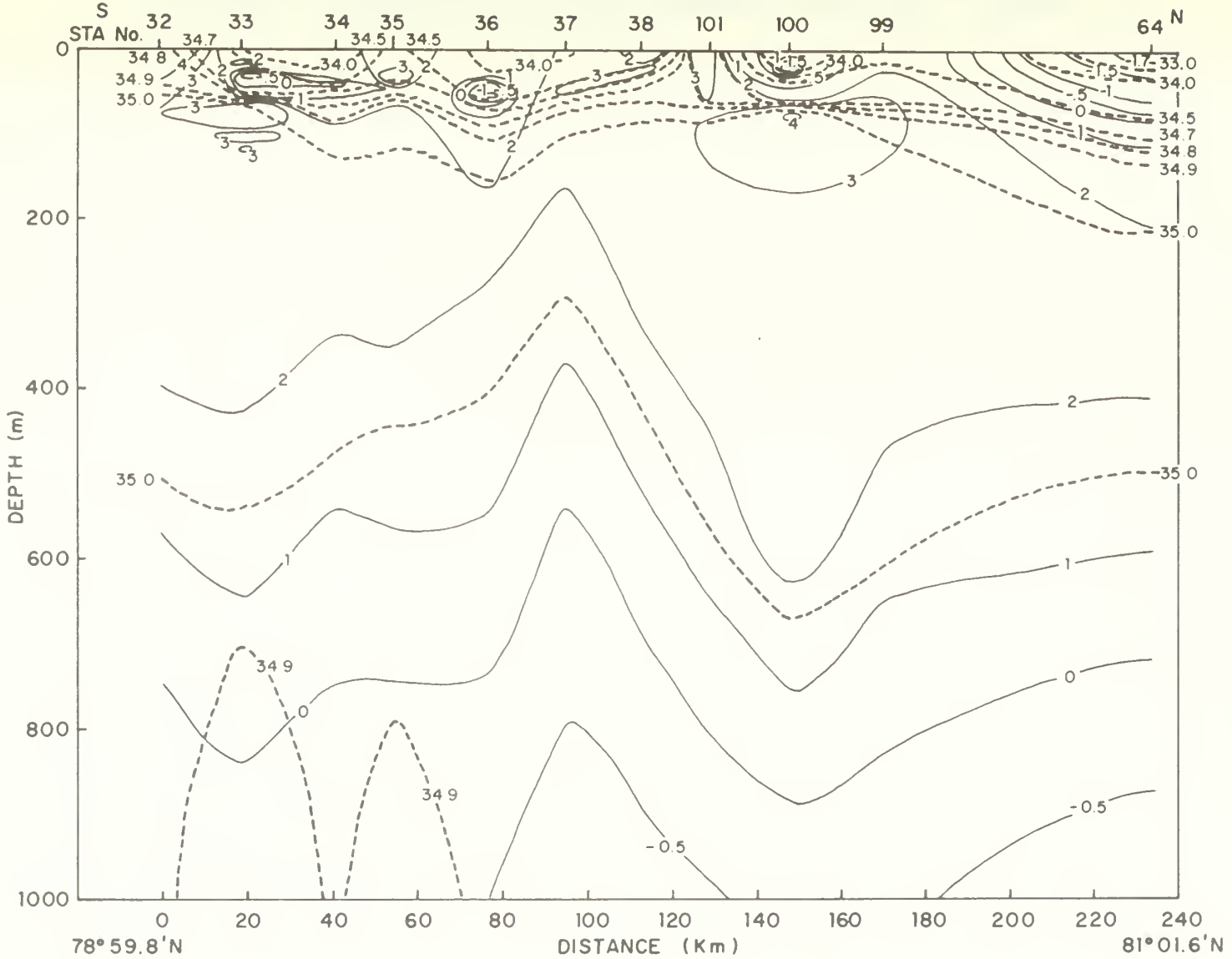


Figure 8. A longitudinal temperature and salinity transect centered on 2°E which shows the maximum temperature of the westward flowing component of the WSC is located just outside the ice edge near Station 100.

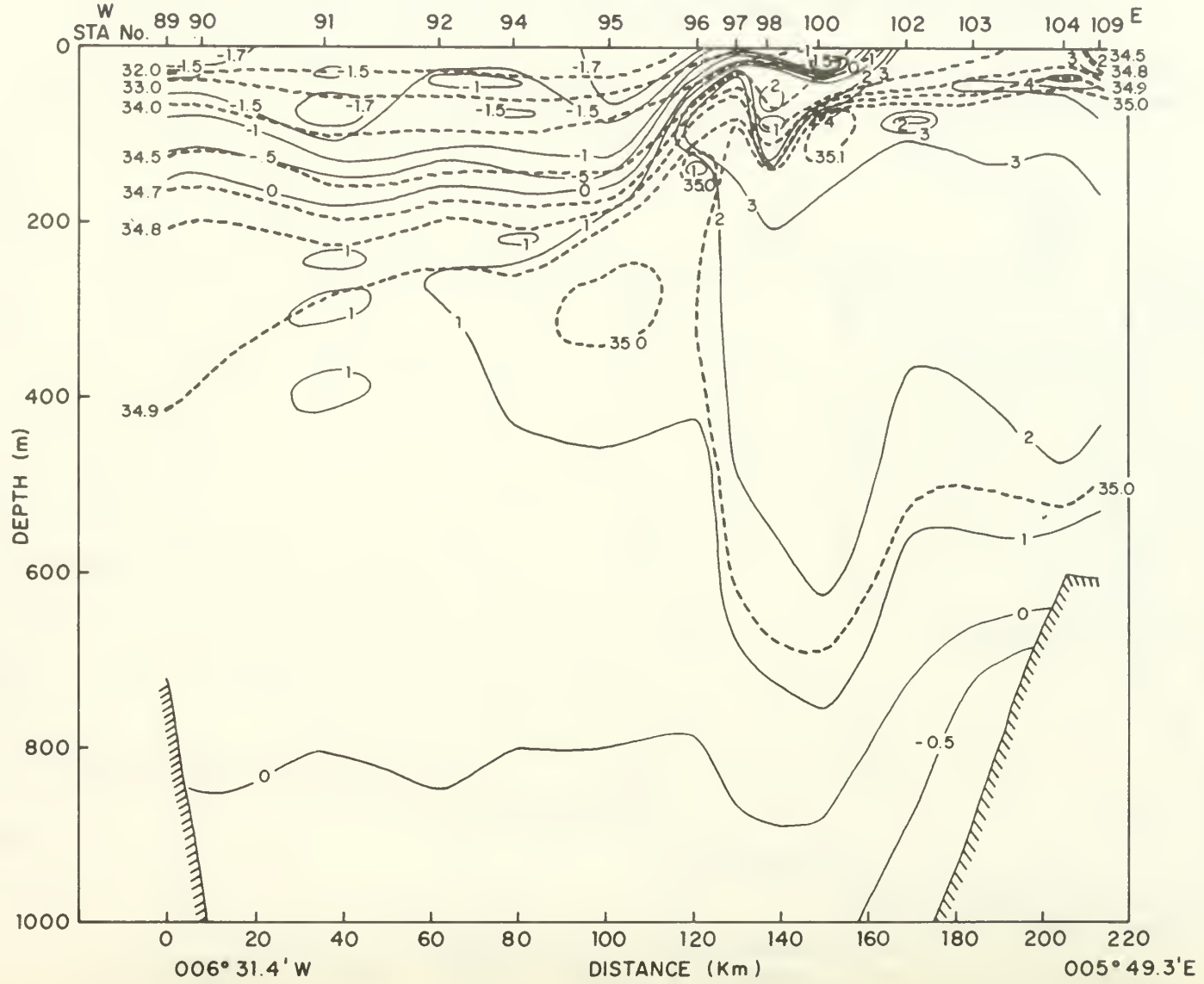


Figure 9. A temperature and salinity transect along 80.5°N illustrating the convergence near Stations 96 to 102 of the warm WSC with the cold PW exiting the Arctic Ocean.

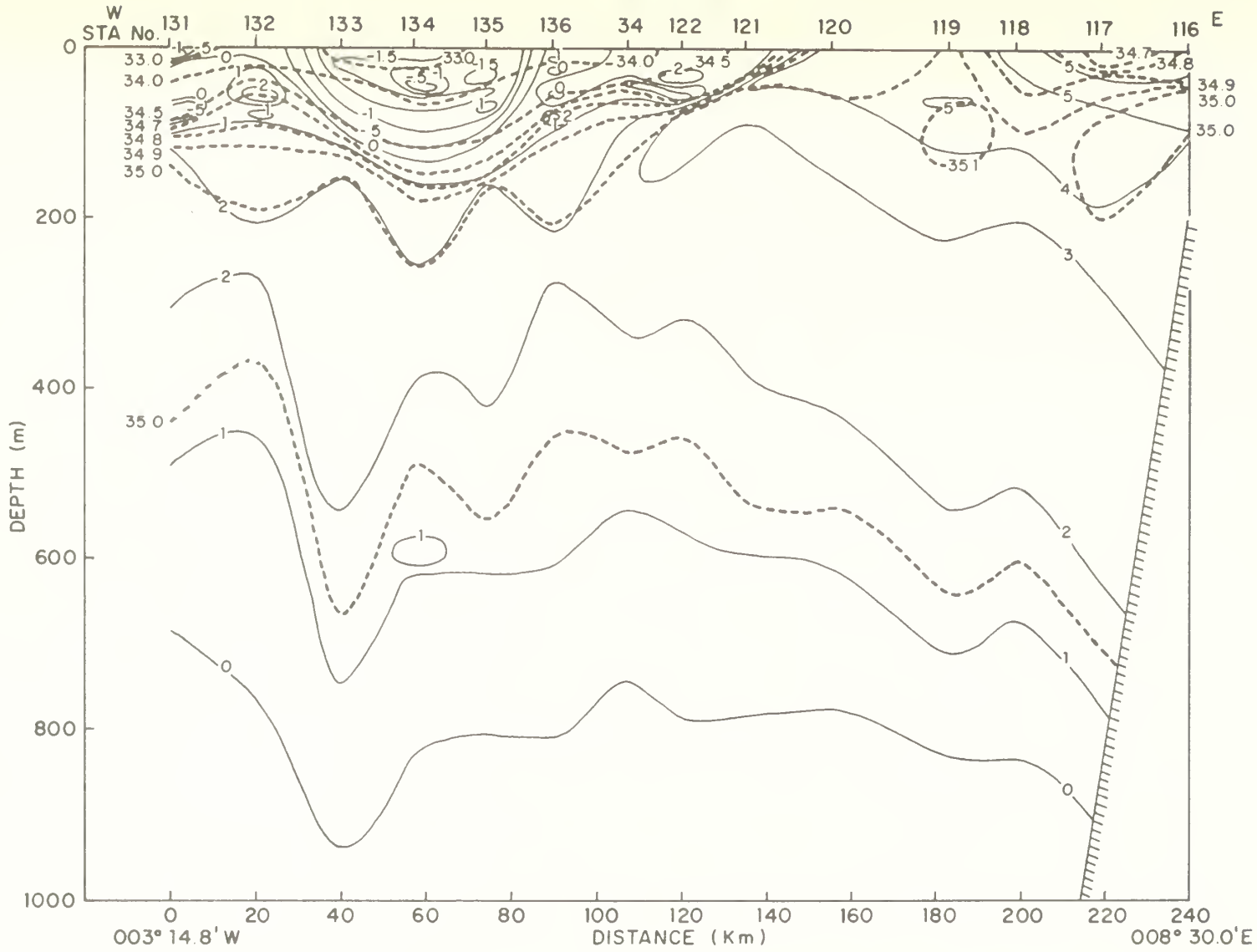


Figure 10. A temperature and salinity transect through a cold core eddy near 79.5°W. It was not possible to discern if this eddy was detached from the EGPF.

APPENDIX A

Explanation of Heading Codes

The heading of the printed output uses the coding from NODC Publication M-2, August 1964, with a few exceptions. Heading entries which are not self-explanatory are as follows: MSQ is the Marsden square, and DPTH is the water depth in meters. Wave source direction (WVD) is in tens of degrees, but the direction 00 indicates calm seas due to ice dampening. The significant wave height is coded by Table 10 (code - 2 = height in meters). Wind speed, V, is coded as Beaufort force, Table 17. The barometer is in tenths of millibars, omitting the 900 or 1000 digit as appropriate; wet and dry bulb temperatures are in degrees C. The present weather is from Table 21 with cloud type and amount from Tables 25 and 26, respectively. The combination 4 X 9 indicates that clouds cannot be observed usually because of fog conditions. The visibility is from Table 27 which is roughly in powers of two with code 4 = 1-2 km. The ice concentration, ICE, is in tenths; amounts less than one tenth are preceded by a minus sign and indicate concentrations in powers of ten, e.g., 10^{-4} = -4.

The entry, NAV, is a code to identify the accuracy of each station position based upon the navigation system used. Code 1 indicates a position determined by visual sightings, radar or by navigation satellite; Code 2 a position determined by Omega or Loran; and Code 3 a position determined by dead reckoning.

The heading data are listed sequentially with increasing station number.

STATION DATA MIZLANT 85 (ARCTIC EAST 1985)

NAT	SHIP	LAT	LONG	MSQ	MO	DY	YR	HR	STA	DPTH	NAV	ICE	WVD	HT	WND	V	BAR	DRY-T	WET	WTHR	CL	AMT	VIS
31	NW	N73-58.7	W003-20.6	253	09	04	85	22.3	1-	3000	1	0	12	2	13	6	137	03.0	02.5	1	3	7	6
31	NW	N75-00.0	E000-00.0	288	09	05	85	10.8	2-	3666	1	0	02	3	02	5	127	02.5	02.1	7	6	7	6
31	NW	N75-38.9	W001-16.2	253	09	05	85	16.4	3-	3676	1	0	02	3	36	6	138	01.6	01.6	7	6	7	6
31	NW	N76-24.2	W002-39.6	253	09	05	85	22.7	4-	3676	1	0	01	4	01	6	159	01.6	00.0	1	6	7	6
31	NW	N77-53.9	W006-01.7	253	09	06	85	12.8	5-	374	1	6	07	0	34	6	212	00.0	00.0	7	6	8	6
31	NW	N77-59.4	W006-54.9	253	09	06	85	17.2	6-	355	1	8	00	0	32	5	225	00.5	-00.6	1	8	7	7
31	NW	N77-59.2	W006-28.6	253	09	06	85	19.7	7-	310	1	6	00	0	35	5	238	-01.1	-01.7	2	8	7	7
31	NW	N77-59.6	W006-12.0	253	09	06	85	22.3	8-	310	1	6	00	0	35	5	236	-01.7	-01.7	2	7	8	6
31	NW	N78-00.5	W006-09.6	253	09	07	85	04.1	9-	318	1	1	00	0	33	5	231	-01.1	-01.1	4	7	8	7
31	NW	N78-00.0	W005-38.1	253	09	07	85	06.6	10-	337	1	-2	00	0	35	5	238	-01.1	-01.1	7	6	8	4
31	NW	N78-02.4	W005-07.0	253	09	07	85	09.7	11-	564	1	6	06	1	34	6	240	00.0	-00.6	7	6	8	5
31	NW	N78-00.1	W004-15.9	253	09	07	85	11.6	12-	2550	1	0	04	1	35	4	244	00.0	-00.6	7	7	8	4
31	NW	N77-59.4	W003-38.3	253	09	07	85	14.1	13-	2751	1	0	01	2	34	5	248	-00.6	-01.1	7	7	8	7
31	NW	N78-00.2	W003-13.6	253	09	07	85	15.6	14-	2751	1	0	01	2	33	5	241	-00.6	-00.6	2	6	8	7
31	NW	N78-01.0	W002-33.5	253	09	07	85	17.1	15-	2839	1	0	36	2	33	5	240	00.0	-01.1	2	6	8	7
31	NW	N78-00.1	W001-44.2	253	09	07	85	19.3	16-	2934	1	0	01	2	33	4	241	00.0	-00.6	2	6	8	6
31	NW	N78-00.6	W000-34.9	253	09	07	85	21.7	17-	3593	1	0	01	2	35	5	240	00.0	-00.6	2	7	8	6
31	NW	N78-00.1	E000-57.7	288	09	08	85	03.3	18-	3117	1	0	01	2	35	6	235	00.0	-00.6	7	7	8	5
31	NW	N78-00.0	E002-09.0	288	09	08	85	06.1	19-	3080	1	0	36	1	35	4	229	-00.6	-01.1	1	6	5	7
31	NW	N77-59.9	E004-32.0	288	09	08	85	09.5	20-	2750	1	0	36	2	02	3	229	01.6	01.1	1	6	6	7
31	NW	N78-00.1	E006-02.5	288	09	08	85	12.2	21-	2200	1	0	02	1	36	3	233	02.2	01.1	1	6	7	7
31	NW	N78-00.2	E007-14.5	288	09	08	85	14.3	22-	3205	1	0	35	1	02	3	230	02.2	00.5	7	6	7	7
31	NW	N77-59.9	E007-48.7	288	09	08	85	16.2	23-	2385	1	0	36	1	05	3	226	01.6	00.5	7	8	5	7

STATION DATA MIZLANT 85 (ARCTIC EAST 1985)

NAT	SHIP	LAT	LONG	MSQ	MO	DY	YR	HR	STA	DPTH	NAV	ICE	WVD	HT	WND	V	BAR	DRY-T	WET	WTHR	CL	AMT	VIS
31	NW	N78-00.4	E008-54.8	288	09	08	85	18.1	24-	1303	1	0	00	0	06	3	224	02.2	01.1	1	8	6	7
31	NW	N78-00.1	E009-45.1	288	09	08	85	20.1	25-	165	1	0	35	1	06	3	200	01.6	01.1	1	6	7	7
31	NW	N78-15.2	E008-57.8	288	09	08	85	22.3	26-	1151	1	0	33	1	03	2	224	01.6	01.1	7	6	8	8
31	NW	N79-00.1	E008-57.5	288	09	09	85	06.8	27-	206	1	0	35	1	00	0	210	02.2	01.6	2	6	8	8
31	NW	N78-59.9	E008-03.8	288	09	09	85	08.5	28-	1104	1	0	35	1	15	3	200	02.8	01.6	2	6	8	8
31	NW	N78-59.4	E006-47.9	288	09	09	85	10.8	29-	1289	1	0	00	0	36	2	208	02.8	01.6	2	6	8	8
31	NW	N78-59.6	E005-03.8	288	09	09	85	14.0	30-	2385	1	0	00	0	07	3	191	02.8	01.6	2	6	8	6
31	NW	N79-00.0	E003-58.1	288	09	09	85	16.0	31-	2747	1	0	03	1	33	2	177	02.8	01.6	2	6	8	7
31	NW	N78-59.8	E002-45.7	288	09	09	85	18.1	32-	2385	1	0	02	1	30	4	003	01.1	00.5	2	6	8	7
31	NW	N79-08.6	E002-19.6	288	09	09	85	20.1	33-	4210	1	0	30	1	30	3	157	02.2	01.6	2	6	8	7
31	NW	N79-19.9	E001-58.1	288	09	09	85	22.2	34-	3300	1	0	30	1	34	4	136	02.2	00.5	7	6	8	4
31	NW	N79-27.9	E001-58.7	288	09	10	85	03.2	35-	2020	1	0	31	1	31	5	082	00.5	00.0	7	7	8	3
31	NW	N79-40.3	E001-58.9	288	09	10	85	05.3	36-	1690	1	0	33	1	12	9	069	00.0	-00.6	7	7	8	3
31	NW	N79-50.3	E001-59.4	288	09	10	85	07.4	37-	3438	1	0	33	2	22	6	055	-01.1	-01.7	7	7	8	3
31	NW	N80-00.0	E001-59.0	936	09	10	85	09.2	38-	2678	1	0	27	2	22	6	052	-00.6	-00.6	7	7	8	3
31	NW	N80-00.3	E003-24.2	936	09	10	85	11.3	39-	2294	1	0	26	2	22	6	060	00.5	00.0	7	7	8	4
31	NW	N80-00.8	E004-50.8	936	09	10	85	13.4	40-	1194	1	0	30	3	32	6	085	00.0	00.0	7	7	8	4
31	NW	N80-00.0	E006-20.7	936	09	10	85	16.0	41-	831	1	0	24	4	22	7	116	00.0	-00.6	7	7	8	5
31	NW	N80-02.3	E009-13.3	936	09	10	85	19.8	42-	498	1	0	24	1	23	7	124	00.0	00.0	2	7	8	7
31	NW	N80-03.9	E010-38.6	935	09	10	85	21.4	43-	445	1	0	20	1	22	7	130	00.5	00.5	2	7	8	7
31	NW	N80-05.0	E012-00.1	935	09	10	85	23.0	44-	90	1	0	23	4	21	7	144	01.6	01.1	1	7	6	7
31	NW	N80-38.2	E015-01.8	935	09	11	85	02.9	45-	183	1	0	24	3	20	5	148	03.4	02.2	2	8	6	7

STATION DATA MIZLANT 85 (ARCTIC EAST 1985)

NAT	SHIP	LAT	LONG	MSQ	MO	DY	YR	HR	STA	DPTH	NAV	ICE	WVD	HT	WND	V	BAR	DRY-T	WET	WTHR	CL	AMT	VIS
31	NW	N80-55.5	E013-58.2	935	09	11	85	06.3	47-	1654	1	0	21	3	22	5	150	01.1	01.1	1	7	6	4
31	NW	N81-03.4	E013-21.3	935	09	11	85	08.9	48-	2111	1	0	20	3	20	4	143	02.2	01.6	1	8	6	7
31	NW	N81-10.6	E012-42.0	935	09	11	85	10.7	49-	2203	1	8	00	0	19	4	154	02.2	01.6	7	6	7	7
31	NW	N81-14.6	E012-36.3	935	09	11	85	13.3	50-	2203	1	8	00	0	20	4	150	01.1	00.5	7	6	7	8
31	NW	N81-19.1	E012-10.6	935	09	11	85	15.5	51-	1632	1	6	00	0	21	4	154	01.1	00.5	7	7	8	8
31	NW	N81-12.4	E012-01.1	935	09	11	85	19.5	52-	2668	1	6	00	0	18	4	152	00.0	-00.6	2	6	8	8
31	NW	N81-10.5	E011-24.5	935	09	11	85	22.5	53-	2120	1	7	00	0	20	4	150	01.1	00.5	2	7	8	7
31	NW	N80-57.1	E011-08.5	935	09	12	85	07.2	54-	1873	1	7	00	0	21	5	129	02.2	01.6	2	7	8	7
31	NW	N80-57.1	E009-30.7	936	09	12	85	12.5	55-	1014	1	3	00	0	20	4	135	01.1	00.5	4	7	8	6
31	NW	N80-56.8	E008-26.7	936	09	12	85	16.9	56-	992	1	6	00	0	19	5	130	01.6	01.6	2	7	8	5
31	NW	N80-57.3	E007-34.8	936	09	12	85	22.1	57-	922	1	8	00	0	19	3	120	01.6	01.1	6	7	8	7
31	NW	N80-53.7	E006-35.8	936	09	13	85	05.9	58-	922	1	5	00	0	16	3	096	01.6	01.1	1	3	7	7
31	NW	N80-58.6	E005-43.1	936	09	13	85	10.4	59-	740	1	7	00	0	13	4	088	01.6	01.1	1	3	7	8
31	NW	N80-53.2	E004-11.8	936	09	13	85	15.3	60-	694	1	7	00	0	08	4	067	02.2	01.1	1	3	3	7
31	NW	N80-56.9	E003-22.1	936	09	13	85	17.3	61-	803	1	7	00	0	07	3	065	00.5	-00.6	1	0	8	8
31	NW	N81-10.1	E002-51.8	936	09	13	85	20.6	62-	886	1	7	00	0	06	4	060	00.0	-00.6	1	0	2	8
31	NW	N81-06.4	E002-37.5	936	09	13	85	23.3	63-	941	1	7	00	0	04	4	050	-00.6	-01.1	1	0	1	8
31	NW	N81-06.4	E001-53.3	936	09	14	85	04.1	64-	1380	1	7	00	0	07	5	038	-01.7	-01.7	1	0	1	8
31	NW	N81-09.6	E000-42.8	936	09	14	85	07.1	65-	2476	1	6	00	0	04	5	034	-00.6	-00.6	1	0	1	8
31	NW	N81-05.9	E000-01.9	936	09	14	85	10.5	66-	2700	1	8	00	0	04	4	029	-01.1	-01.1	1	0	2	8
31	NW	N81-05.6	W000-54.3	901	09	14	85	13.9	67-	2750	1	7	00	0	07	5	909	-01.7	-01.7	1	0	2	6
31	NW	N81-09.6	W001-05.9	901	09	14	85	17.2	68-	2842	1	7	00	0	06	5	999	-01.7	-02.2	1	6	7	7
31	NW	N81-03.4	W002-03.5	901	09	14	85	22.9	69-	3664	1	5	00	0	05	5	988	-01.7	-01.7	1	6	8	7

STATION DATA MIZLANT 85 (ARCTIC EAST 1985)

NAT	SHIP	LAT	LONG	MSQ	MO	DY	YR	HR	STA	DPTH	NAV	ICE	WVD	HT	WND	V	BAR	DRY-T	WET	WTHR	CL	AMT	VIS
31	NW	N81-06.5	W003-31.4	901	09	15	85	02.8	70-	2938	1	2	00	0	04	6	966	-01.7	-01.7	1	6	6	7
31	NW	N81-10.4	W004-38.7	901	09	15	85	05.9	71-	3300	1	2	00	0	03	5	969	-05.0	-05.6	1	6	8	8
31	NW	N81-12.2	W005-42.7	901	09	15	85	08.0	72-	2769	1	2	24	1	02	5	970	-05.6	-05.6	2	6	8	8
31	NW	N81-13.9	W006-27.3	901	09	15	85	10.4	73-	2203	1	5	21	1	03	5	967	-06.7	-06.7	2	6	8	8
31	NW	N81-14.4	W007-45.2	901	09	15	85	14.6	74-	1380	1	4	21	1	03	5	975	-06.1	-06.1	7	6	8	8
31	NW	N81-14.1	W008-50.5	901	09	15	85	17.8	75-	181	1	6	00	0	04	5	977	-06.7	-06.7	7	6	8	8
31	NW	N81-14.3	W010-41.9	902	09	15	85	20.2	76-	110	1	2	19	1	03	4	984	-06.1	-06.7	2	6	8	8
31	NW	N81-24.0	W010-59.9	902	09	15	85	23.3	77-	74	1	8	19	1	02	5	999	-06.7	-06.7	2	6	8	7
31	NW	N81-24.0	W006-59.8	901	09	16	85	12.7	78-	2568	1	6	19	1	01	4	000	-03.8	-04.4	2	7	8	7
31	NW	N81-31.8	W006-36.6	901	09	16	85	15.4	79-	3117	1	7	00	0	04	5	998	-04.4	-05.6	2	7	8	7
31	NW	N81-35.9	W007-41.2	901	09	16	85	17.8	80-	2427	1	8	00	0	02	5	035	-04.4	-05.0	2	6	8	6
31	NW	N81-41.8	W007-27.4	901	09	16	85	23.0	81-	2747	1	7	00	0	32	4	017	-05.6	-05.6	2	6	8	7
31	NW	N81-43.2	W006-21.4	901	09	17	85	04.5	82-	3336	1	8	00	0	36	4	022	-05.0	-06.1	2	6	8	8
31	NW	N81-45.5	W005-14.1	901	09	17	85	07.3	83-	3392	1	8	00	0	01	4	032	-04.4	-05.0	1	6	6	8
31	NW	N81-47.1	W004-46.7	901	09	17	85	14.9	84-	3311	1	8	00	0	33	3	055	-04.4	-06.7	1	6	7	7
31	NW	N81-27.3	W005-45.9	901	09	18	85	02.6	85-	2806	1	6	00	0	35	3	070	-05.0	-05.6	2	6	8	7
31	NW	N81-20.9	W006-47.6	901	09	18	85	09.5	86-	2605	1	7	00	0	33	4	069	-03.8	-04.4	2	7	8	6
31	NW	N81-12.7	W006-43.2	901	09	18	85	12.0	87-	1892	1	8	00	0	34	4	069	-03.0	-05.6	2	7	8	6
31	NW	N80-56.7	W006-55.9	901	09	18	85	17.4	88-	1197	1	6	00	0	29	4	066	-05.0	-05.6	2	6	8	7
31	NW	N80-43.0	W006-31.4	901	09	18	85	21.0	89-	756	1	6	00	0	33	3	062	-05.0	-05.6	4	7	8	6
31	NW	N80-44.2	W006-06.4	901	09	18	85	22.9	90-	1288	1	4	00	0	03	2	060	-05.0	-05.6	4	7	8	3
31	NW	N80-42.5	W004-30.1	901	09	19	85	05.7	91-	2934	1	4	00	0	31	3	064	-05.6	-06.7	1	7	8	7
31	NW	N80-29.9	W003-23.1	901	09	19	85	12.9	92-	3027	1	6	00	0	31	3	058	-04.4	-05.0	2	7	8	7

STATION DATA MIZLANT 85 (ARCTIC EAST 1985)

NAT	SHIP	LAT	LONG	MSQ	MO	DY	YR	HR	STA	DPTH	NAV	ICE	WVD	HT	WND	V	BAR	DRY-T	WET	WTHR	CL	AMT	VIS
31	NW	N80-28.0	W003-27.0	901	09	20	85	05.5	93-		1	6	00	0	01	3	073	-05.0	-05.6	2	6	8	7
31	NW	N80-27.7	W002-26.4	901	09	20	85	12.3	94-	3666	1	6	00	0	01	4	078	-06.1	-06.7	1	3	7	7
31	NW	N80-21.9	W001-25.5	901	09	20	85	17.2	95-	4159	1	8	00	0	36	4	069	-06.1	-06.7	1	6	7	7
31	NW	N80-19.7	W000-20.7	901	09	20	85	21.2	96-	2479	1	2	00	0	36	3	069	-05.0	-05.0	1	6	7	3
31	NW	N80-21.4	E000-35.4	936	09	21	85	03.8	97-	2655	1	4	00	0	02	4	093	-06.7	-07.2	1	8	4	7
31	NW	N80-21.0	E001-18.8	936	09	21	85	07.3	98-	2751	1	0	11	1	36	4	050	-05.0	-05.6	2	7	8	7
31	NW	N80-31.5	E002-03.8	936	09	21	85	09.3	99-	2473	1	0	14	1	36	3	065	-04.4	-05.0	7	7	8	6
31	NW	N80-19.2	E001-54.9	936	09	21	85	11.3	100-	1925	1	0	10	1	02	5	060	-01.7	-02.2	7	6	8	6
31	NW	N80-08.8	E001-59.8	936	09	21	85	11.3	101-	2294	1	0	09	1	06	4	058	-00.0	-00.0	2	6	8	7
31	NW	N80-22.2	E003-08.1	936	09	21	85	15.9	102-	1562	1	0	08	1	02	4	056	-00.0	-01.7	2	6	8	4
31	NW	N80-25.0	E004-00.0	936	09	21	85	17.6	103-	895	1	0	08	1	02	5	052	-00.0	-01.7	2	6	8	6
31	NW	N80-24.7	E005-14.4	936	09	21	85	19.5	104-	602	1	0	07	2	06	6	052	01.1	-01.1	2	6	8	6
31	NW	N80-38.9	E003-57.9	936	09	21	85	21.9	105-	884	1	0	08	1	06	5	064	00.0	-00.6	2	6	8	6
31	NW	N80-44.8	E003-11.6	936	09	22	85	01.2	106-	1014	1	8	00	0	04	3	063	-03.3	-03.8	2	7	8	5
31	NW	N80-49.0	E005-03.4	936	09	22	85	09.4	107-	666	1	1	00	0	05	5	054	-03.3	-03.8	2	7	8	7
31	NW	N80-40.2	E005-28.0	936	09	22	85	11.6	108-	692	1	0	08	1	05	5	052	-03.3	-03.8	2	7	8	6
31	NW	N80-30.1	E005-49.3	936	09	22	85	13.3	109-	611	1	0	04	0	03	5	048	-02.2	-02.8	7	7	8	6
31	NW	N80-19.8	E006-20.6	936	09	22	85	15.1	110-	566	1	0	07	2	02	6	043	-01.7	-02.8	7	7	8	6
31	NW	N80-07.9	E007-13.2	936	09	22	85	17.6	111-	520	1	0	06	2	02	5	040	00.0	-00.6	2	7	8	7
31	NW	N79-55.8	E008-19.8	288	09	22	85	19.9	112-	502	1	0	06	2	01	4	042	00.5	00.0	2	7	8	6
31	NW	N79-51.2	E008-55.8	288	09	22	85	21.4	113-	456	1	0	06	2	02	4	040	02.2	01.6	2	7	8	6
31	NW	N79-45.5	E009-35.7	288	09	22	85	22.9	114-	410	1	0	06	2	03	5	038	02.2	01.6	2	7	8	6
31	NW	N79-41.3	E009-55.8	288	09	23	85	03.7	115-	200	1	0	03	1	02	4	047	03.6	03.4	2	7	8	7

STATION DATA MIZLANT 85 (ARCTIC EAST 1985)

NAT	SHIP	LAT	LONG	MSQ	MO	DY	YR	HR	STA	DPTH	NAV	ICE	WVD	HT	WND	V	BAR	DRY-T	WET	WTHR	CL	AMT	VIS
31	NW	N79-26.0	E008-30.0	288	09	23	85	06.5	116-	200	1	0	03	1	02	4	043	02.8	02.8	2	7	8	7
31	NW	N79-26.4	E007-27.1	288	09	23	85	07.8	117-	831	1	0	03	2	01	4	040	02.8	02.2	2	7	8	7
31	NW	N79-27.1	E006-31.6	288	09	23	85	09.5	118-	1396	1	0	01	1	01	4	050	02.8	02.2	2	7	8	7
31	NW	N79-26.7	E005-41.8	288	09	23	85	11.1	119-	2111	1	0	05	4	02	6	054	02.2	01.6	2	7	8	6
31	NW	N79-26.6	E004-20.7	288	09	23	85	13.1	120-	2568	1	0	04	4	02	6	073	02.2	01.1	2	7	8	7
31	NW	N79-21.2	E003-22.1	288	09	23	85	14.8	121-	2663	1	0	02	3	02	5	077	02.2	02.2	7	7	8	5
31	NW	N79-15.1	E002-33.6	288	09	23	85	16.4	122-	4397	1	0	03	3	02	5	087	02.2	02.2	7	7	8	5
31	NW	N79-09.9	E001-48.8	288	09	23	85	17.7	123-	3300	1	0	03	3	02	4	094	02.2	01.6	7	7	8	5
31	NW	N79-07.9	E000-58.2	288	09	23	85	19.2	124-	2750	1	0	03	4	34	5	102	01.6	01.1	2	7	8	6
31	NW	N79-08.1	W000-05.9	253	09	23	85	20.8	125-	2702	1	0	03	3	35	6	114	01.6	01.1	7	7	8	5
31	NW	N79-08.6	W001-03.7	253	09	23	85	22.3	126-	2056	1	0	03	3	34	4	124	-00.6	-01.1	2	7	8	5
31	NW	N79-07.9	W001-47.1	253	09	23	85	23.8	127-	2572	1	0	03	2	35	4	136	-01.1	-01.7	2	7	8	6
31	NW	N79-07.7	W002-40.6	253	09	24	85	01.4	128-	2081	1	0	35	1	35	5	140	-02.8	-03.3	2	8	8	7
31	NW	N79-06.9	W003-26.4	253	09	24	85	03.1	129-	2203	1	0	30	1	35	4	146	-03.8	-04.4	2	8	8	7
31	NW	N79-05.3	W004-09.6	253	09	24	85	05.1	130-	1925	1	5	00	0	36	4	152	-03.3	-03.8	1	6	6	7
31	NW	N79-21.5	W003-14.8	253	09	24	85	11.3	131-	2294	1	5	00	0	36	4	173	-03.8	-04.4	2	7	8	5
31	NW	N79-21.8	W002-15.4	253	09	24	85	13.4	132-	2449	1	1	34	1	36	4	174	-05.6	-05.6	4	7	8	3
31	NW	N79-22.9	W001-24.1	253	09	24	85	15.3	133-	2662	1	2	00	0	33	3	174	-05.6	-05.6	4	7	3	6
31	NW	N79-21.9	W000-27.7	253	09	24	85	17.4	134-	2842	1	-2	07	1	01	4	169	-05.6	-05.6	4	7	6	5
31	NW	N79-22.1	E000-24.3	288	09	24	85	19.1	135-	3137	1	0	06	1	36	3	168	-03.8	-04.4	2	7	8	6
31	NW	N79-19.4	E001-10.1	288	09	24	85	20.9	136-	3119	1	0	05	2	35	5	171	-03.3	-03.8	7	8	6	6
31	NW	N79-34.4	W000-17.2	253	09	25	85	01.1	137-	2841	1	1	00	0	35	4	178	-03.8	-04.4	2	6	8	7
31	NW	N79-45.5	E000-45.5	288	09	25	85	03.7	138-	2740	1	0	04	1	01	4	[illegible]						

STATION DATA MIZLANT 85 (ARCTIC EAST 1985)

NAT	SHIP	LAT	LONG	MSQ	MO	DY	YR	HR	STA	DPTH	NAV	ICE	WVD	HT	WND	V	BAR	DRY-T	WET	WTHR	CL	AMT	VIS
31	NW	N79-47.5	W000-03.4	253	09	25	85	05.7	139-	2659	1	0	05	1	35	4	183	-04.4	-04.4	2	6	8	7
31	NW	N79-57.9	W000-12.6	253	09	25	85	07.6	140-	2564	1	0	05	1	01	4	184	-08.9	-08.9	4	7	8	1
31	NW	N79-53.6	W001-03.5	253	09	25	85	09.4	141-	2751	1	0	06	2	36	4	189	-10.0	-10.6	7	7	8	7
31	NW	N79-45.1	W001-20.1	253	09	25	85	11.0	142-	3297	1	1	05	2	36	4	186	-10.0	-10.6	1	7	7	7
31	NW	N79-45.6	W000-35.0	253	09	25	85	12.9	143-	2785	1	0	05	2	36	6	182	-11.1	-11.1	2	7	8	6
31	NW	N79-44.7	W000-06.9	253	09	25	85	14.0	144-	2808	1	0	05	1	01	5	181	-11.1	-11.1	2	7	8	7
31	NW	N79-30.3	W000-26.8	253	09	25	85	16.3	145-	2753	1	0	09	1	01	4	184	-08.9	-08.9	2	7	8	6
31	NW	N79-28.0	W001-21.0	253	09	25	85	17.9	146-	2662	1	8	00	0	01	5	189	-08.3	-08.9	2	7	8	6
31	NW	N79-30.7	W002-09.0	253	09	25	85	19.3	147-	2660	1	8	00	0	36	4	186	-10.0	-10.0	1	7	5	6
31	NW	N79-33.5	W001-59.1	253	09	25	85	20.4	148-	2660	1	8	00	0	02	6	178	-10.0	-10.6	1	7	5	7
31	NW	N79-31.4	W002-11.6	253	09	26	85	00.7	149-	2640	1	8	00	0	01	4	185	-08.9	-09.4	1	7	7	7
31	NW	N79-31.3	W002-54.5	253	09	26	85	02.4	150-	2203	1	4	00	0	36	3	185	-09.4	-09.4	1	4	3	7
31	NW	N79-37.3	W003-13.6	253	09	26	85	05.0	151-	2294	1	8	00	0	35	5	185	-09.4	-09.4	1	4	5	7
31	NW	N79-37.9	W002-51.1	253	09	26	85	08.9	152-	2568	1	8	00	0	35	4	186	-07.8	-07.8	2	4	8	7
31	NW	N79-27.7	W001-24.5	253	09	26	85	13.9	153-	2568	1	8	00	0	36	5	165	-06.1	-06.7	1	4	5	7
31	NW	N79-16.0	W001-57.0	253	09	26	85	15.7	154-	2568	1	0	08	1	01	6	159	-05.6	-06.1	2	7	8	7
31	NW	N79-15.2	W002-51.4	253	09	26	85	17.3	155-	2385	1	0	06	2	35	6	156	-05.6	-06.7	2	7	8	7
31	NW	N79-09.0	W003-45.3	253	09	26	85	20.4	156-	2020	1	8	00	0	36	6	163	-06.1	-07.2	2	7	8	7

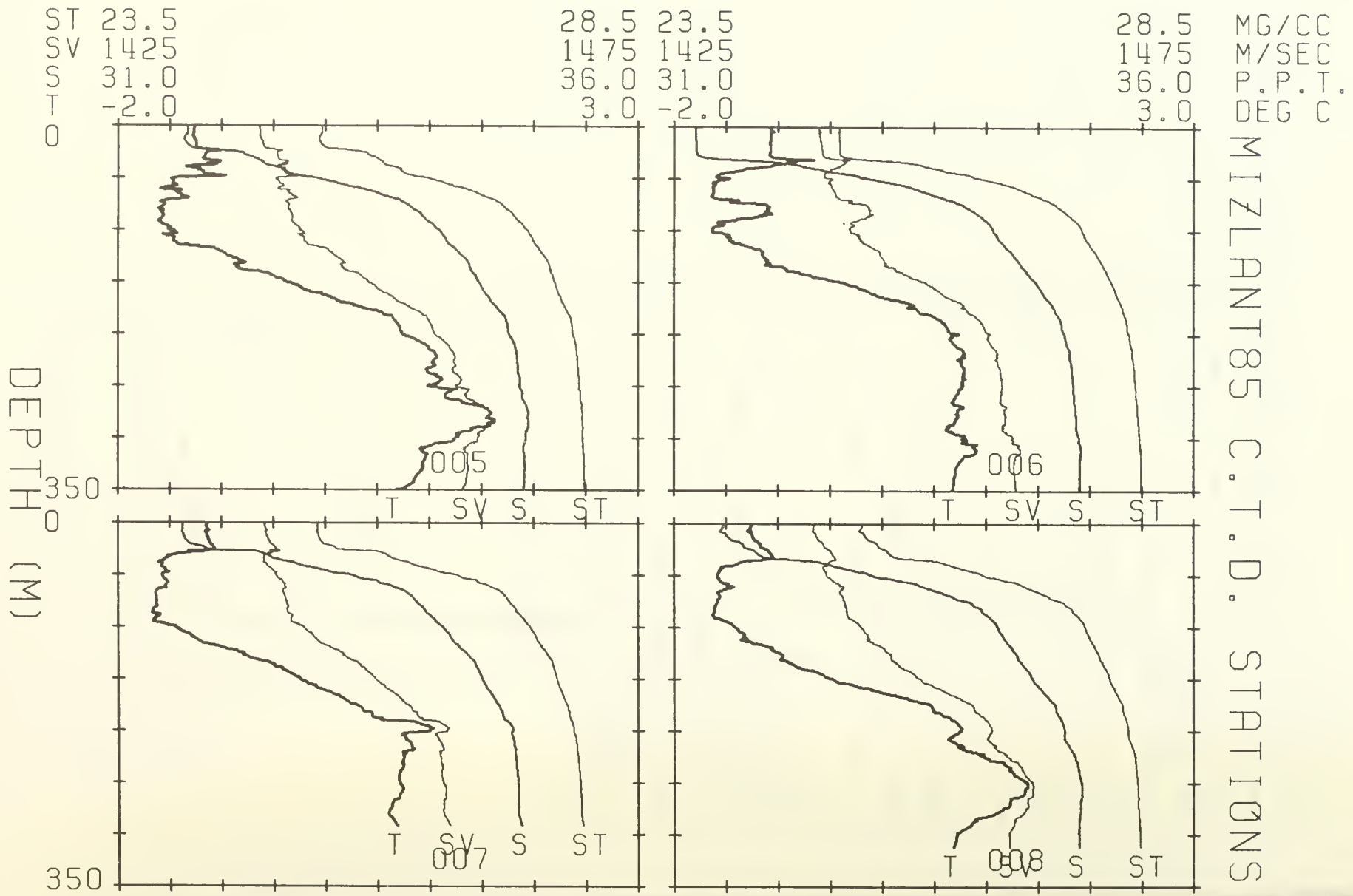
APPENDIX B

Property Profiles For MIZLANT 85 Stations

This section contains plots of temperature, salinity, sound speed, and sigma-t for the 150 of 156 stations of MIZLANT 85 which were successfully recovered from the cassette tapes of the data logging system. Six stations were not recovered from the cassettes in digital form. These stations are: 1, 2, 3, 77, 78 and 115. Raw temperature and salinity profile plots for these stations are available but are not included in this report. Two stations had serious anomalies introduced by the editing program, 118 and 148. In the interests of expeditious reporting, these two are shown with the corrections traced in; they will be formally corrected later. Station 19D (down) was recorded with too low a gain and is useful only near the surface. The upward trace failed to reach the surface. Both halves are shown in one diagram with the missing part of the profiles sketched in. Down and up traces were obtained at about one third of the stations, mostly during the first part of the cruise. With a few exceptions, only the down casts are presented in this report.

Within the ice, the ranges of water properties are small. We have used this fact to advantage by expanding scales to better show the small differences which often are interesting in these cold waters. Outside the ice the ranges are moderate, necessitating a change in scaling. Other changes in scaling have been made to keep plots separated in some instances. To conserve paper, shallow-water stations are plotted four per page while the deep-water stations are shown two per page. To assist in distinguishing between curves the temperature profile has been darkened three times while the salinity trace only twice. The curves are also labeled: T for temperature, S for salinity, SV for sound velocity, and ST for sigma-t.

MIZLANT85 C.T.D. STATIONS


ST 23.5 28.5 23.5 28.5 MG/CC
SV 1425 1475 1425 1475 M/SEC
S 31.0 36.0 31.0 36.0 P.P.T.
T -2.0 3.0 -2.0 3.0 DEG C
0
350
DEPTH (M)
005
006
007
008
T SV S ST
MIZLANT85 C.T.D. STATIONS

MG/CC
M/SEC
P.P.T.
DEG C

MIZLANT85 C.T.D. STATIONS

28.5
1475
36.0
3.0

T
SV
S
ST

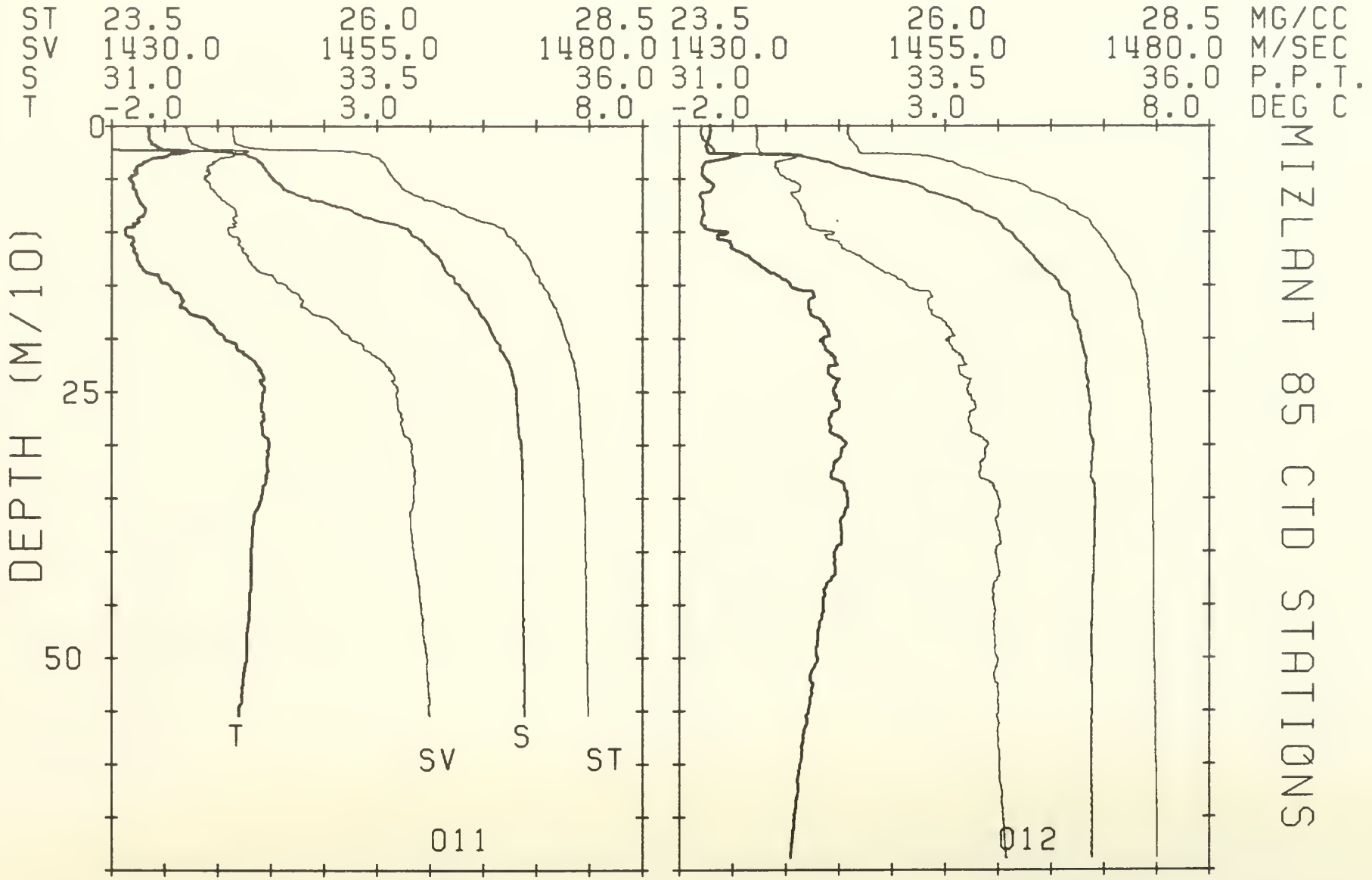
28.5 23.5
1475 1425
36.0 31.0
3.0 -2.0

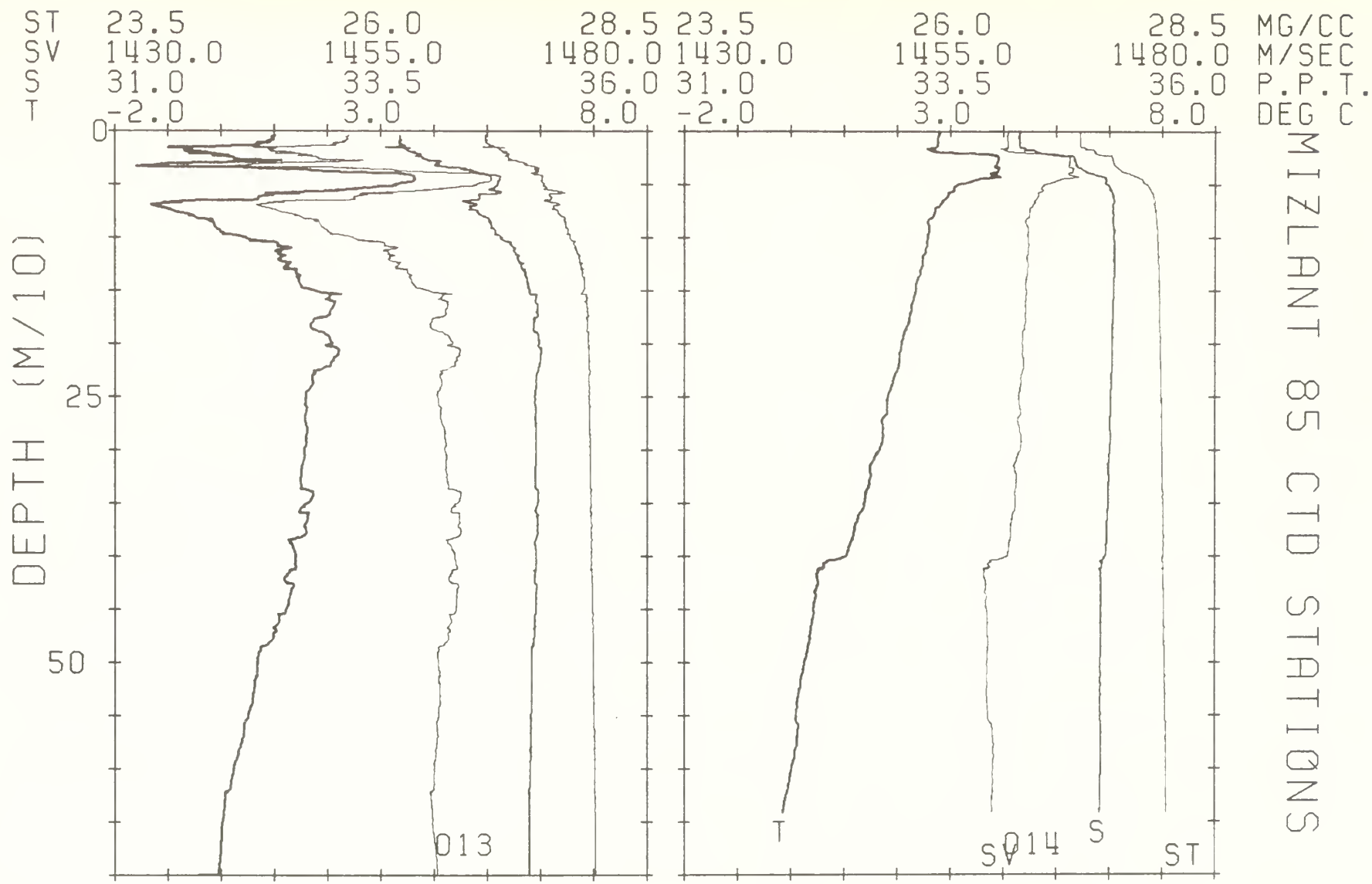
ST 23.5
SV 1425
S 31.0
T -2.0

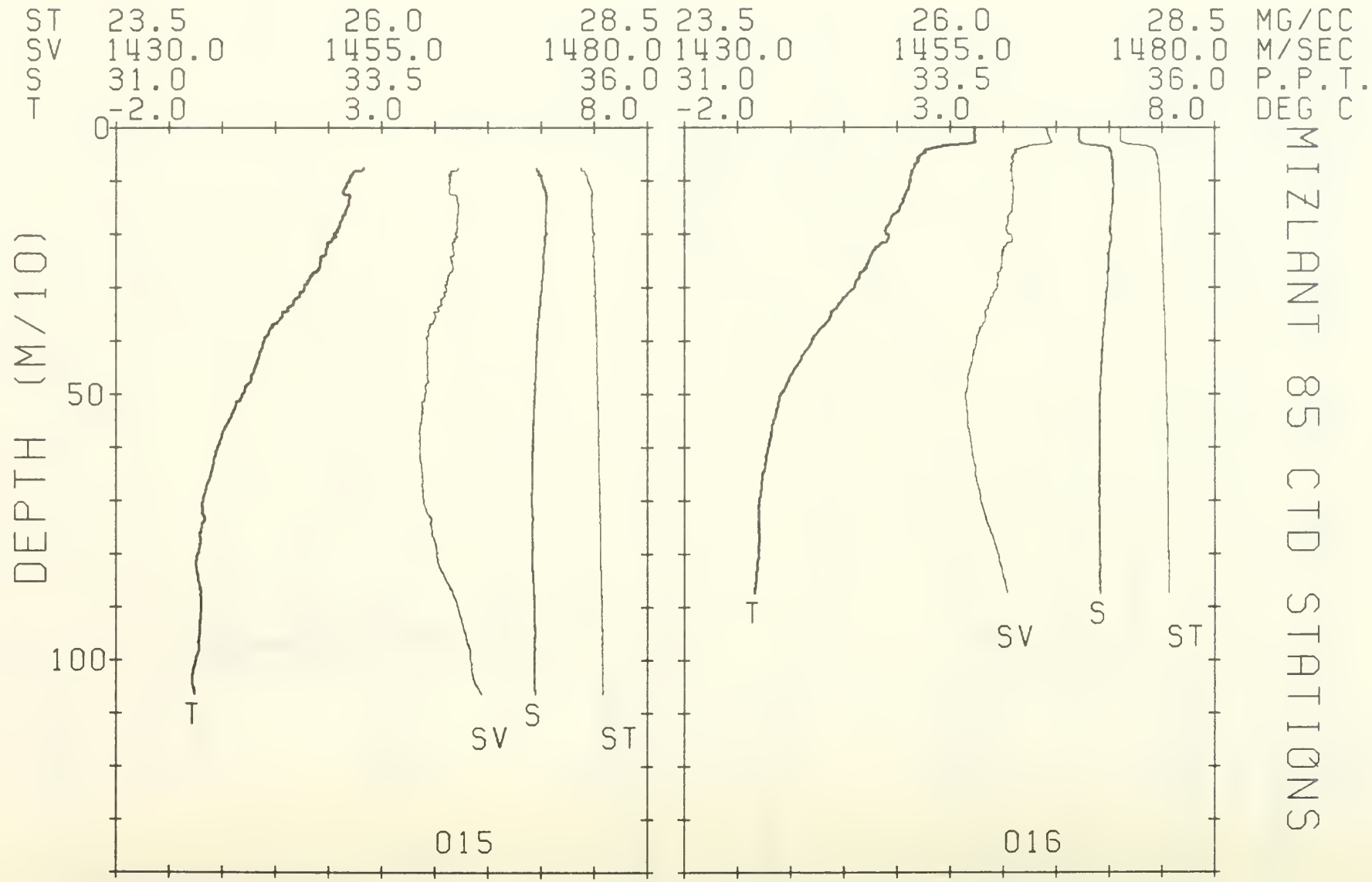
0 350

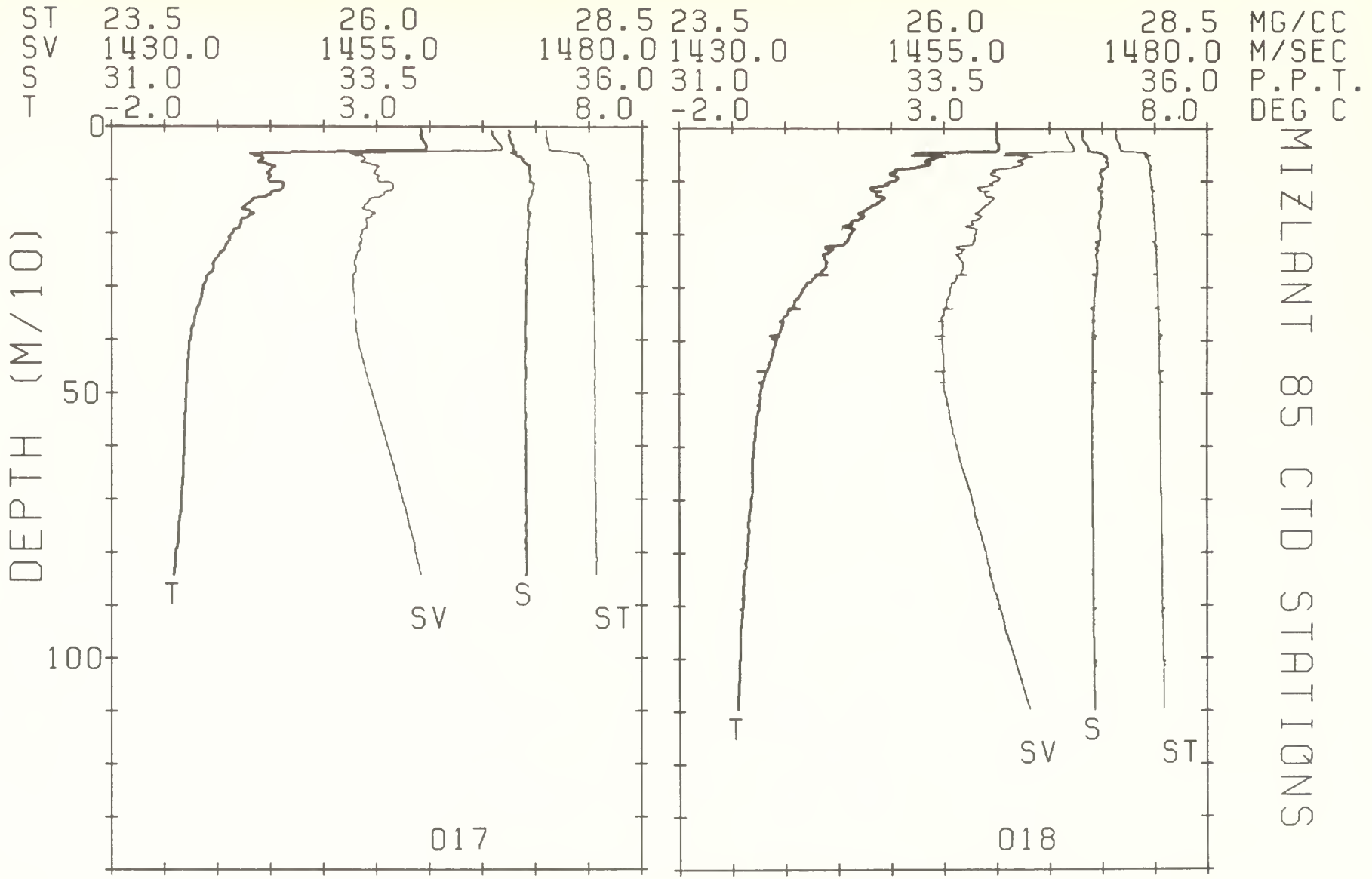
DEPTH (M)

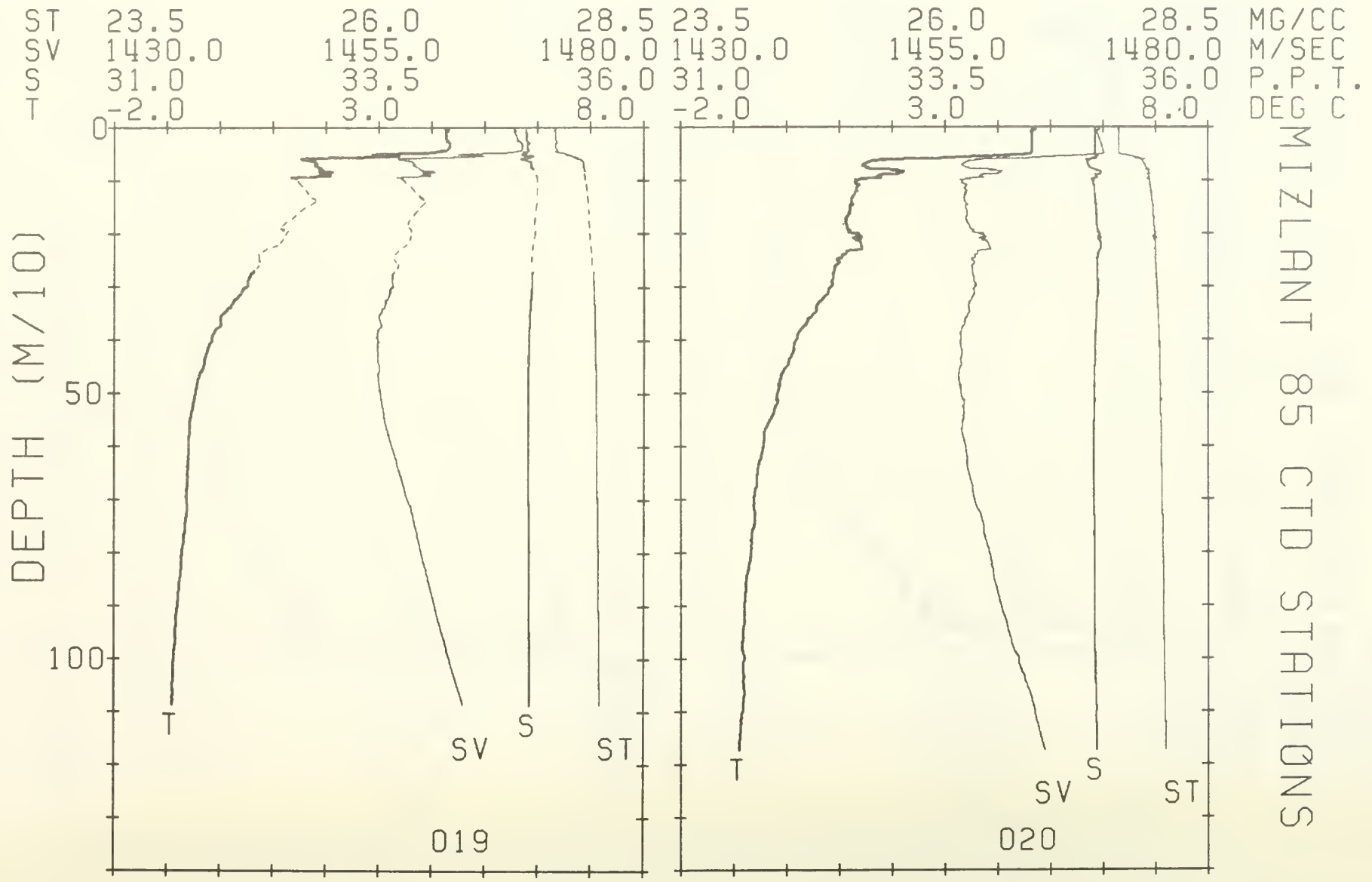
0 350

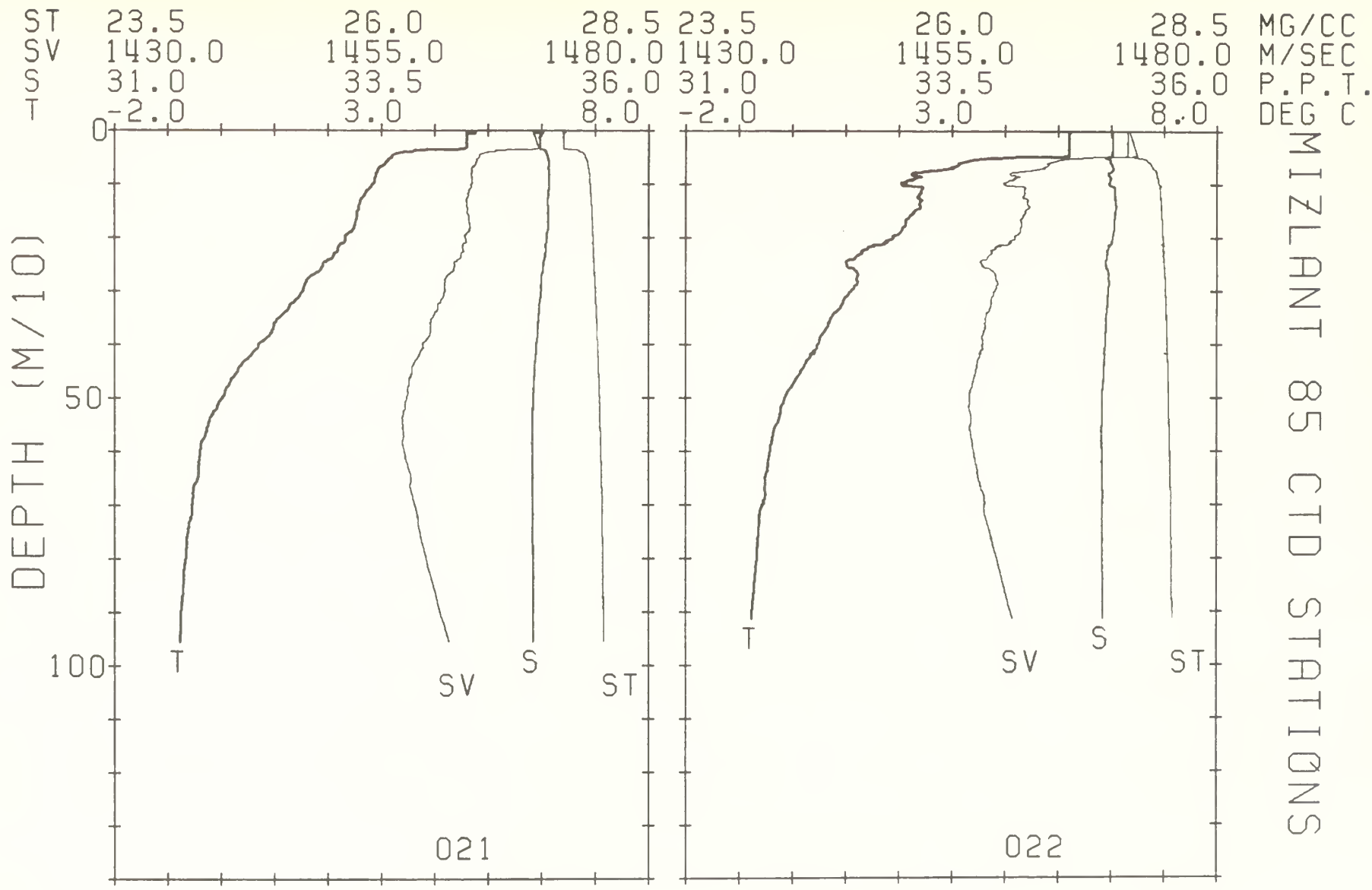

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
0
25
50
DEPTH (M/10)
T
SV
S
ST
011
012
MIZLANT 85 CTD STATIONS

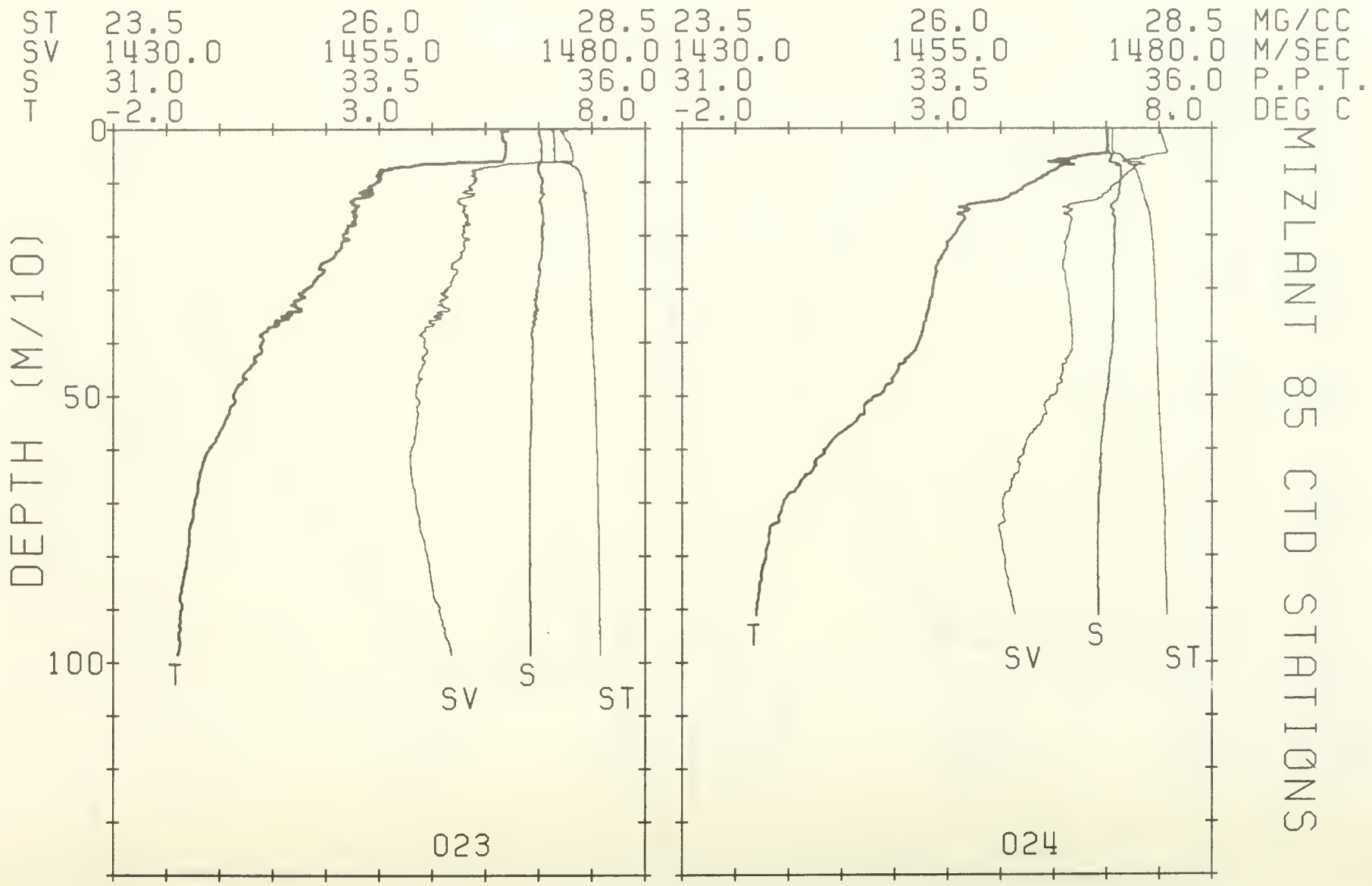

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
25
50
013
014
T
SV
S
ST
MIZLANT 85 CTD STATIONS

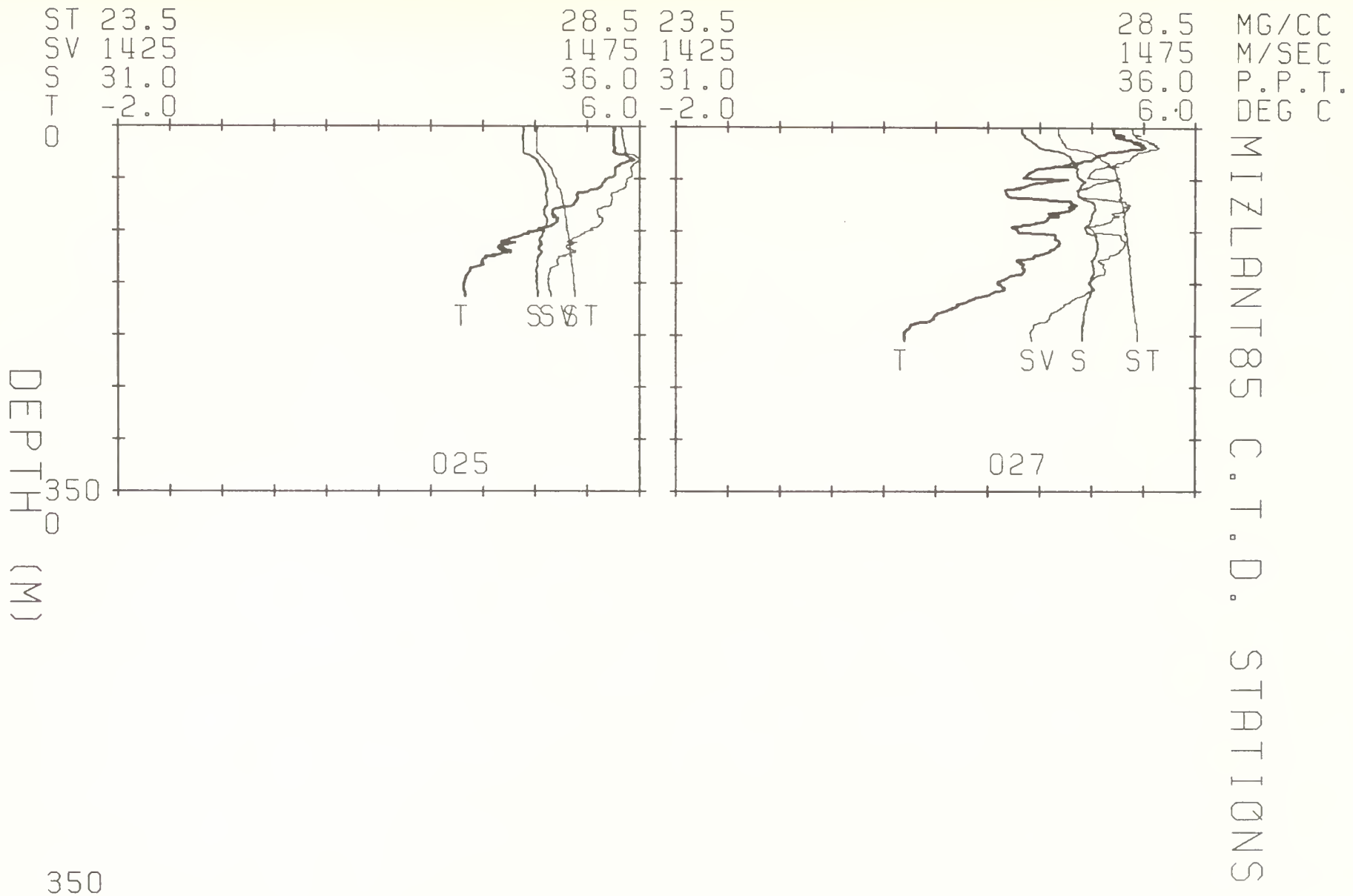

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
015
016
MIZLANT 85 CTD STATIONS

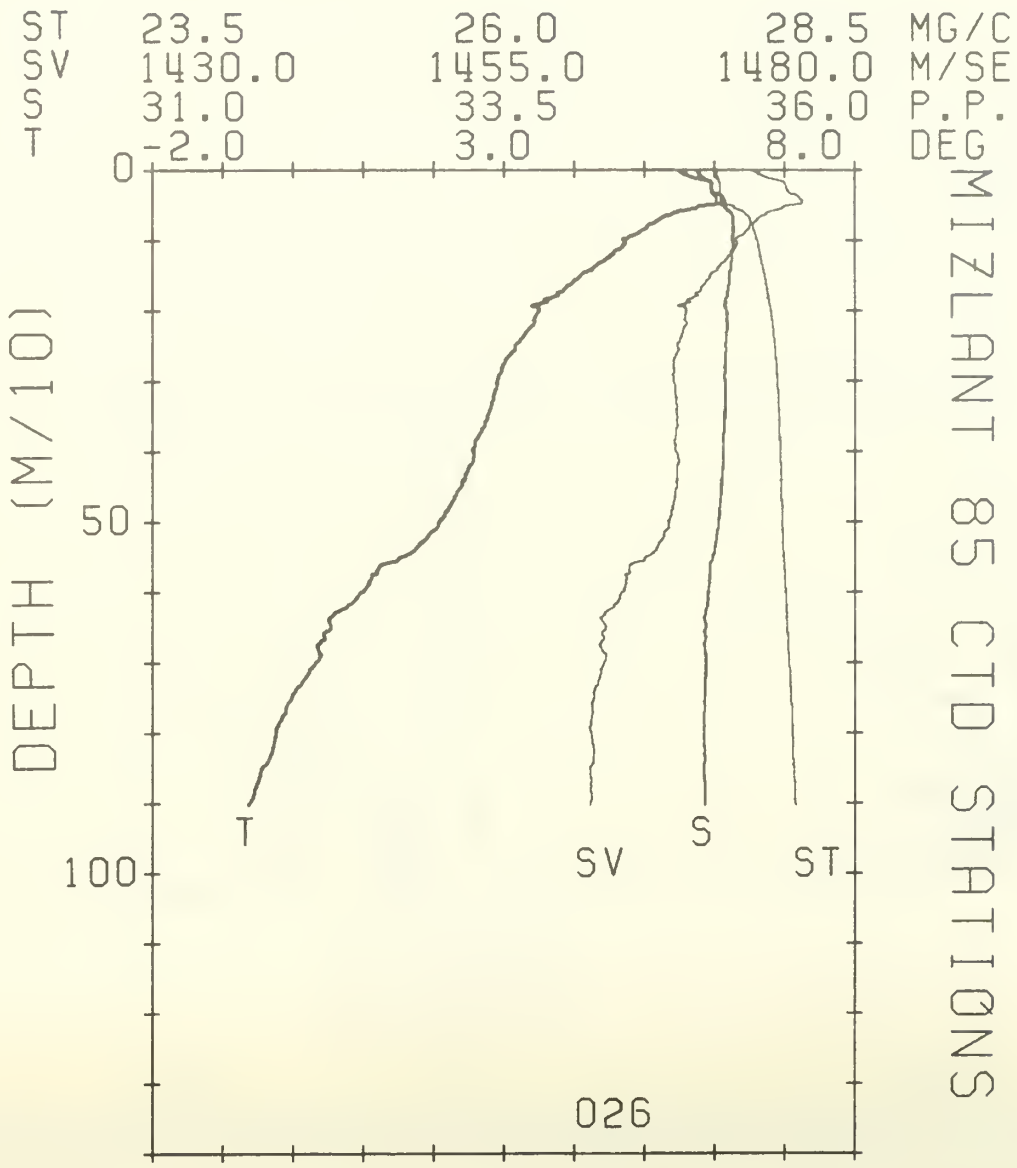

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
017
018
MIZLANT 85 CTD STATIONS

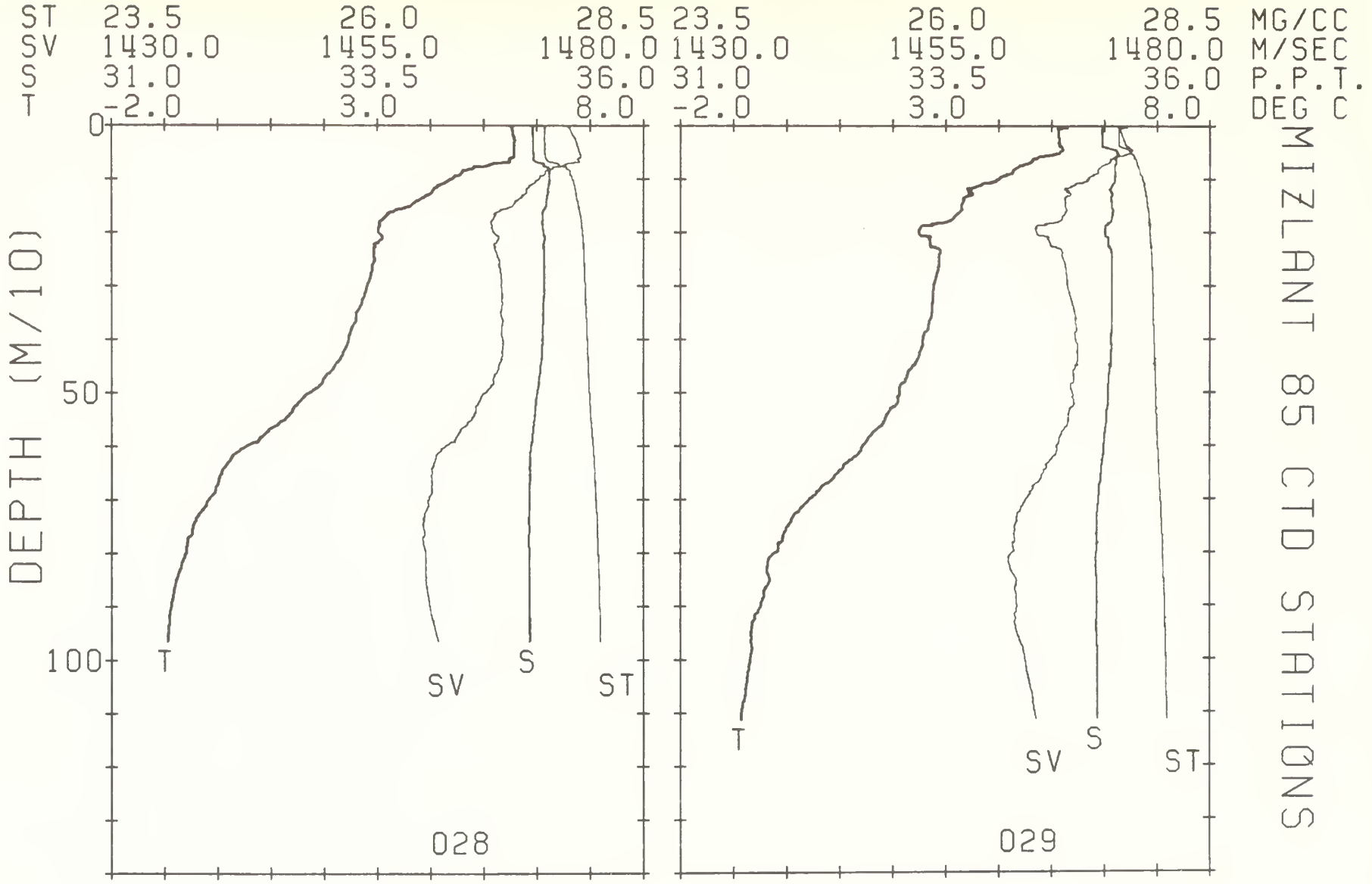

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
019
020
MIZLANT 85 CTD STATIONS

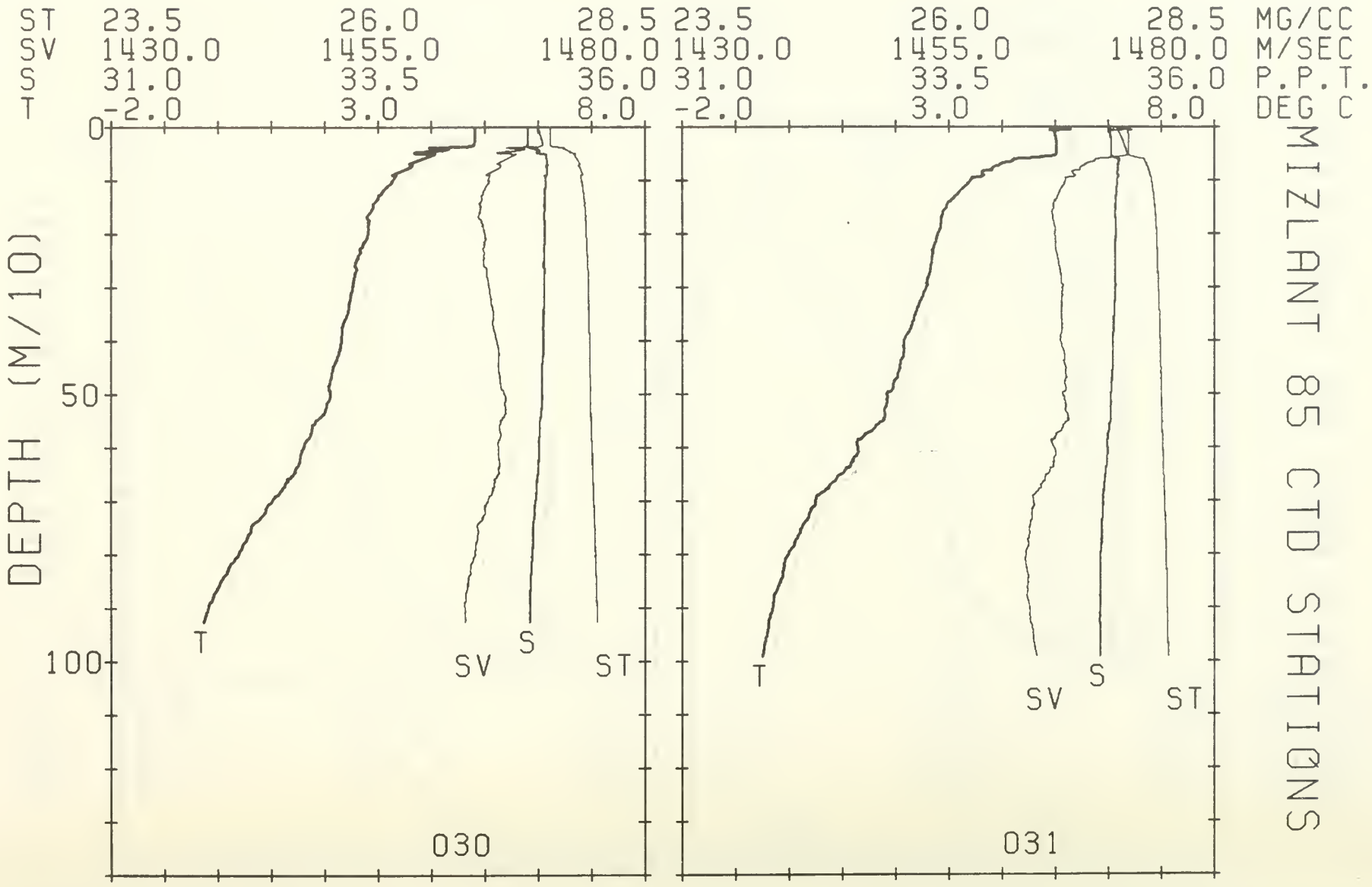

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
021
022
MIZLANT 85 CTD STATIONS

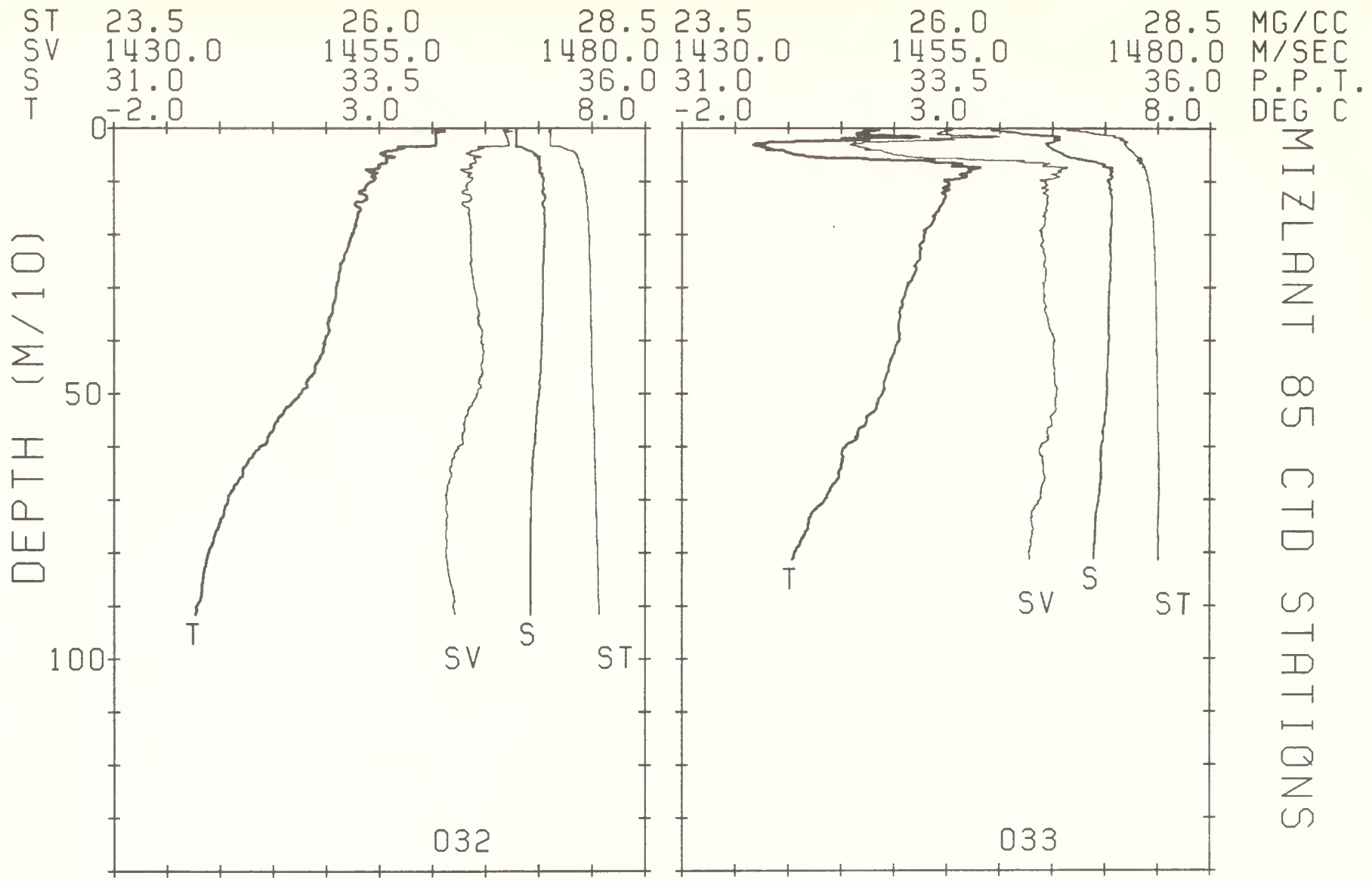

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
023
024
MIZLANT 85 CTD STATIONS

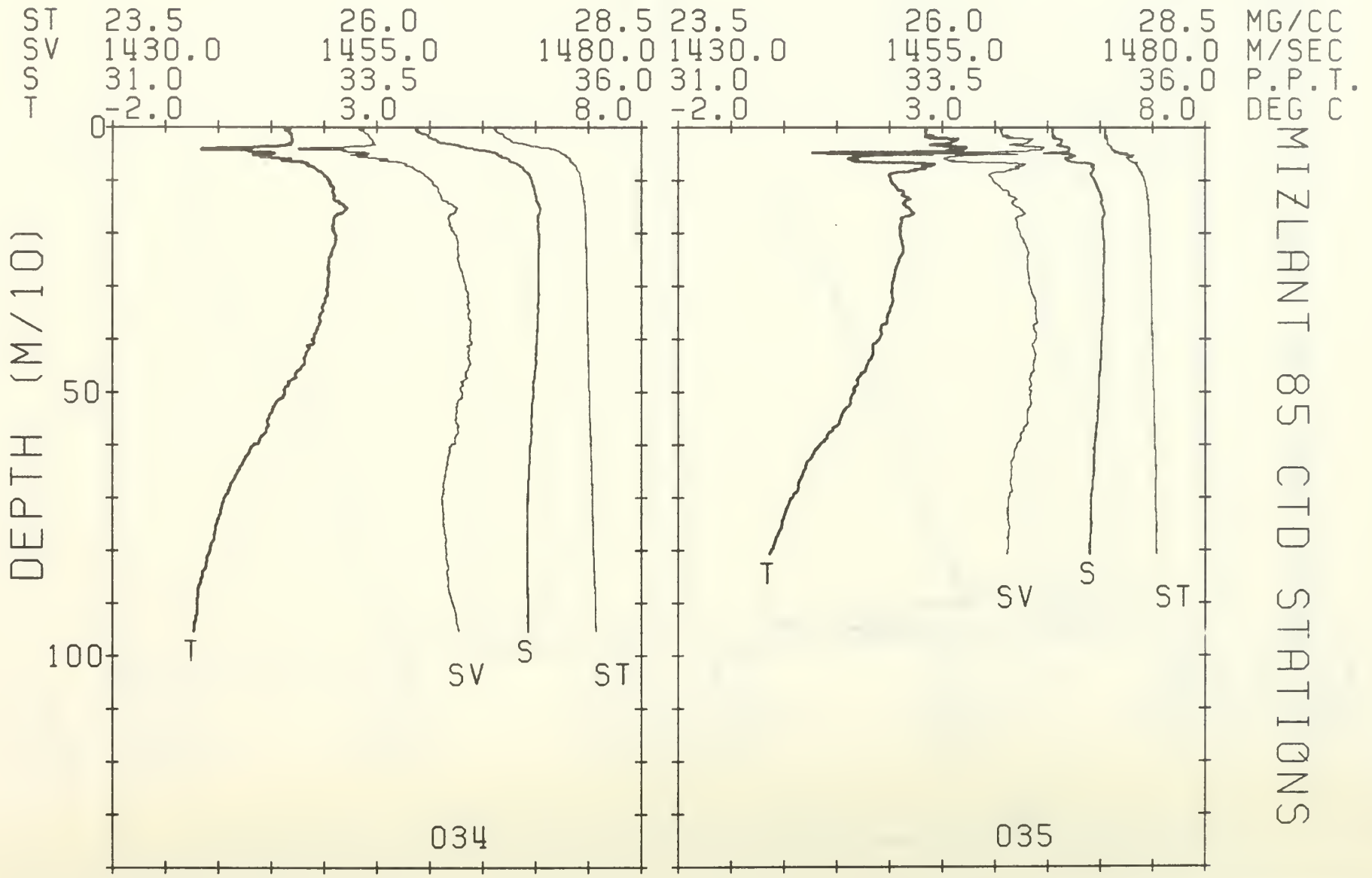

ST 23.5 28.5 23.5 28.5 MG/CC
SV 1425 1475 1425 1475 M/SEC
S 31.0 36.0 31.0 36.0 P.P.T.
T -2.0 6.0 -2.0 6.0 DEG C
0
350
0
DEPTH (M)
T
S
SV
ST
025
027
350
MIZLANT85 C.T.D. STATIONS

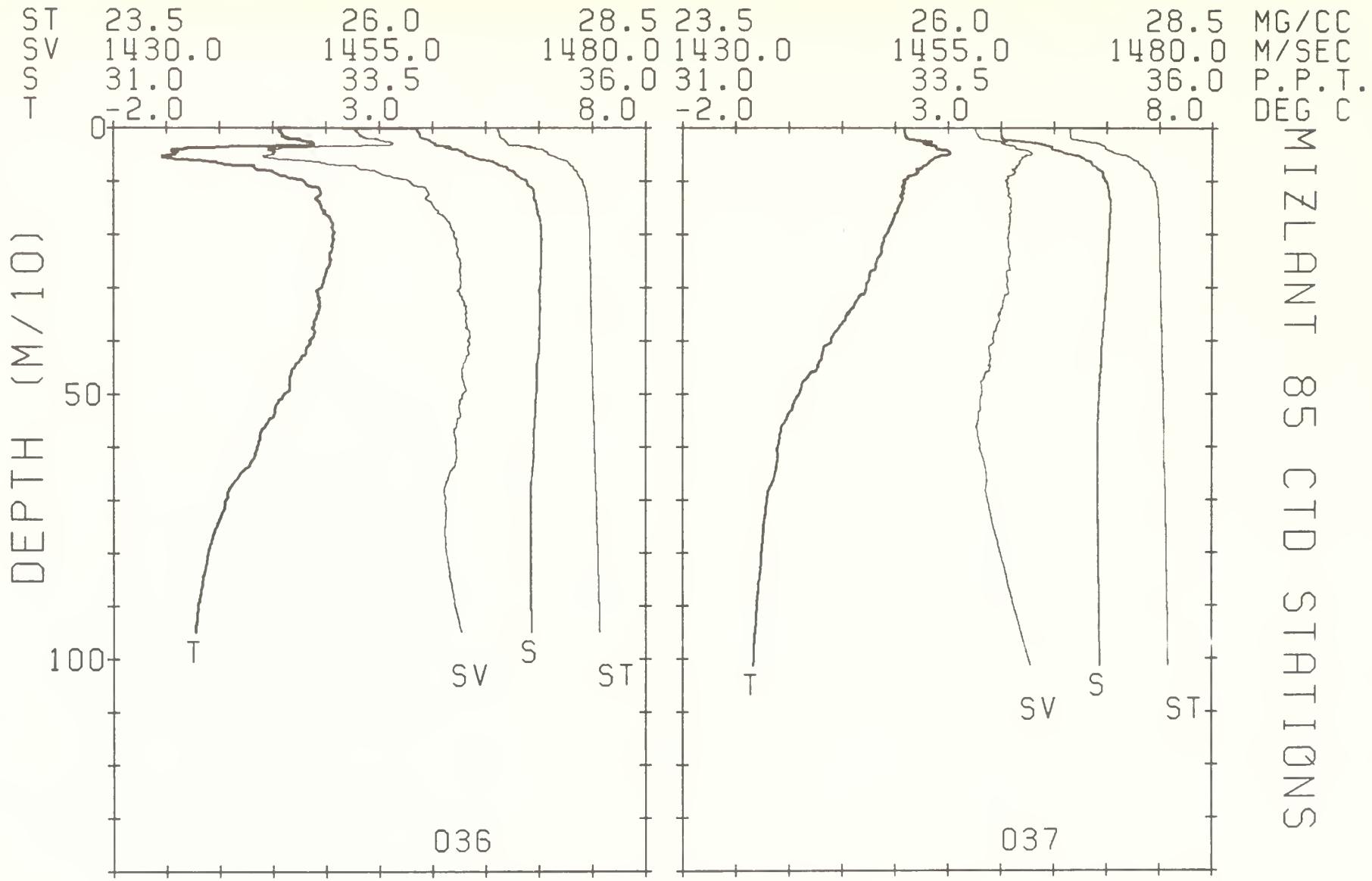

ST 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 DEG C
0
50
100
DEPTH (M/10)
T
SV
S
ST
026
MIZLANT 85 CTD STATIONS

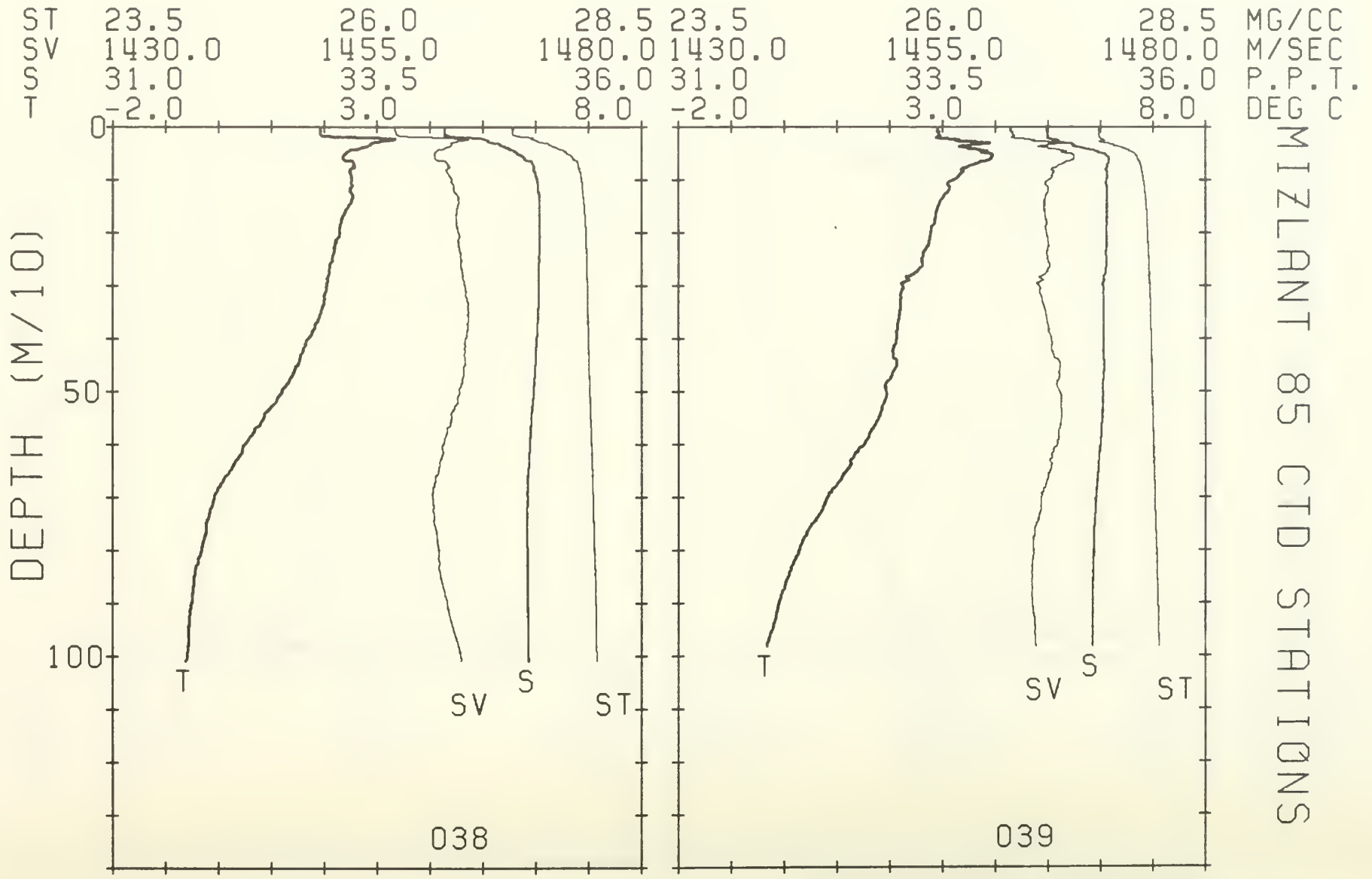

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
028
029
MIZLANT 85 CTD STATIONS

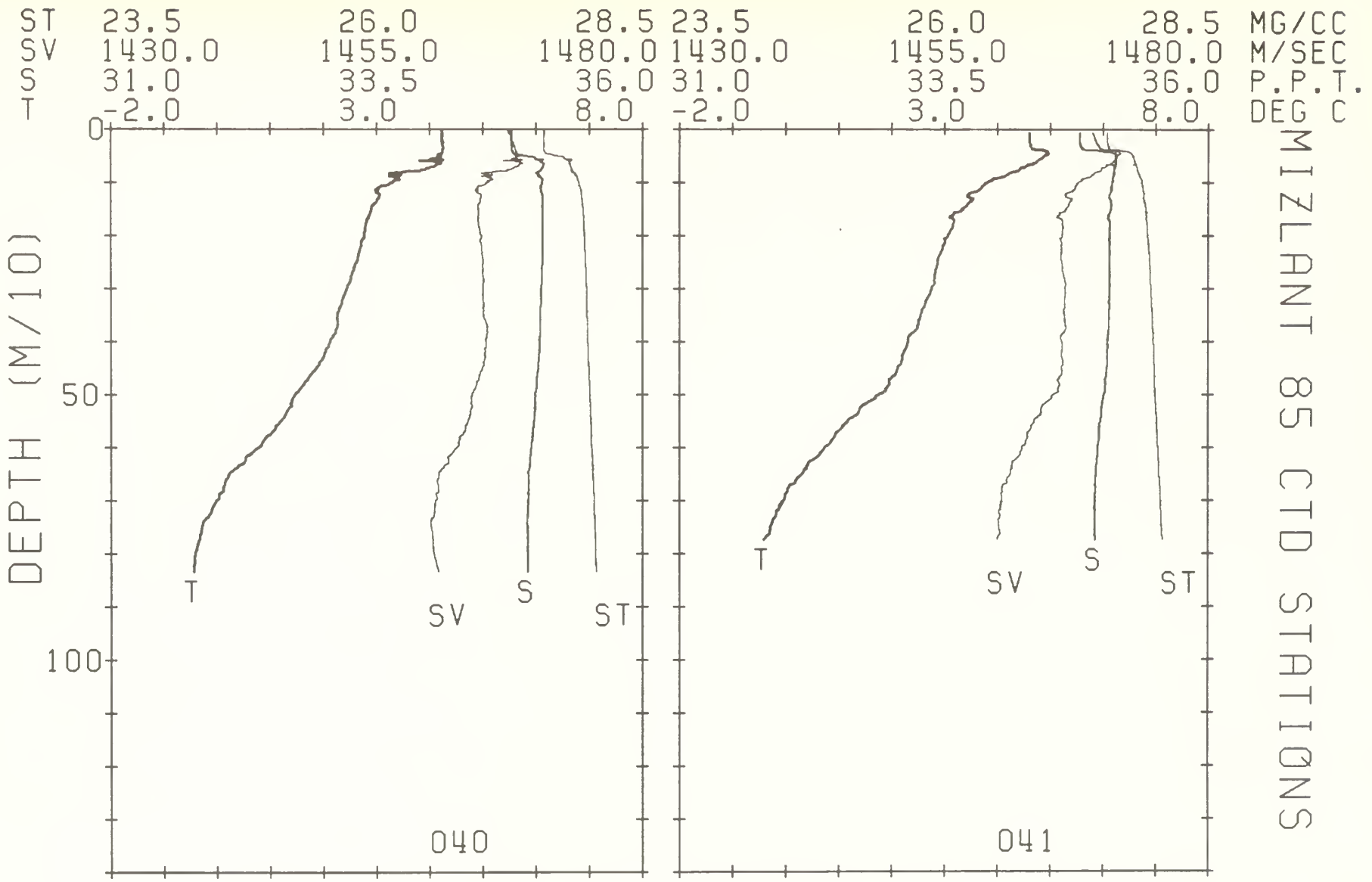

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
030
031
MIZLANT 85 CTD STATIONS

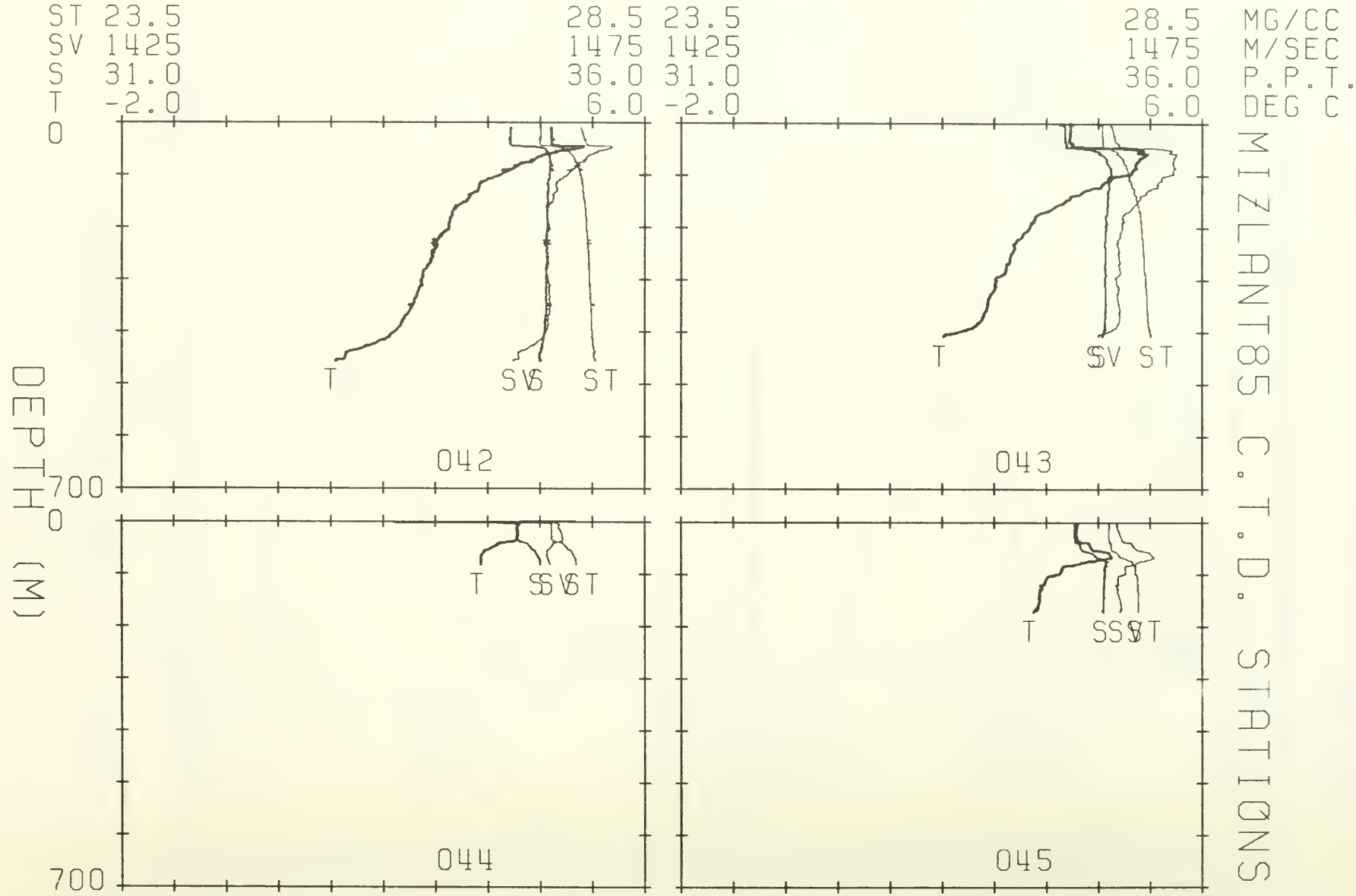

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
032
033
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
034
035
MIZLANT 85 CTD STATIONS

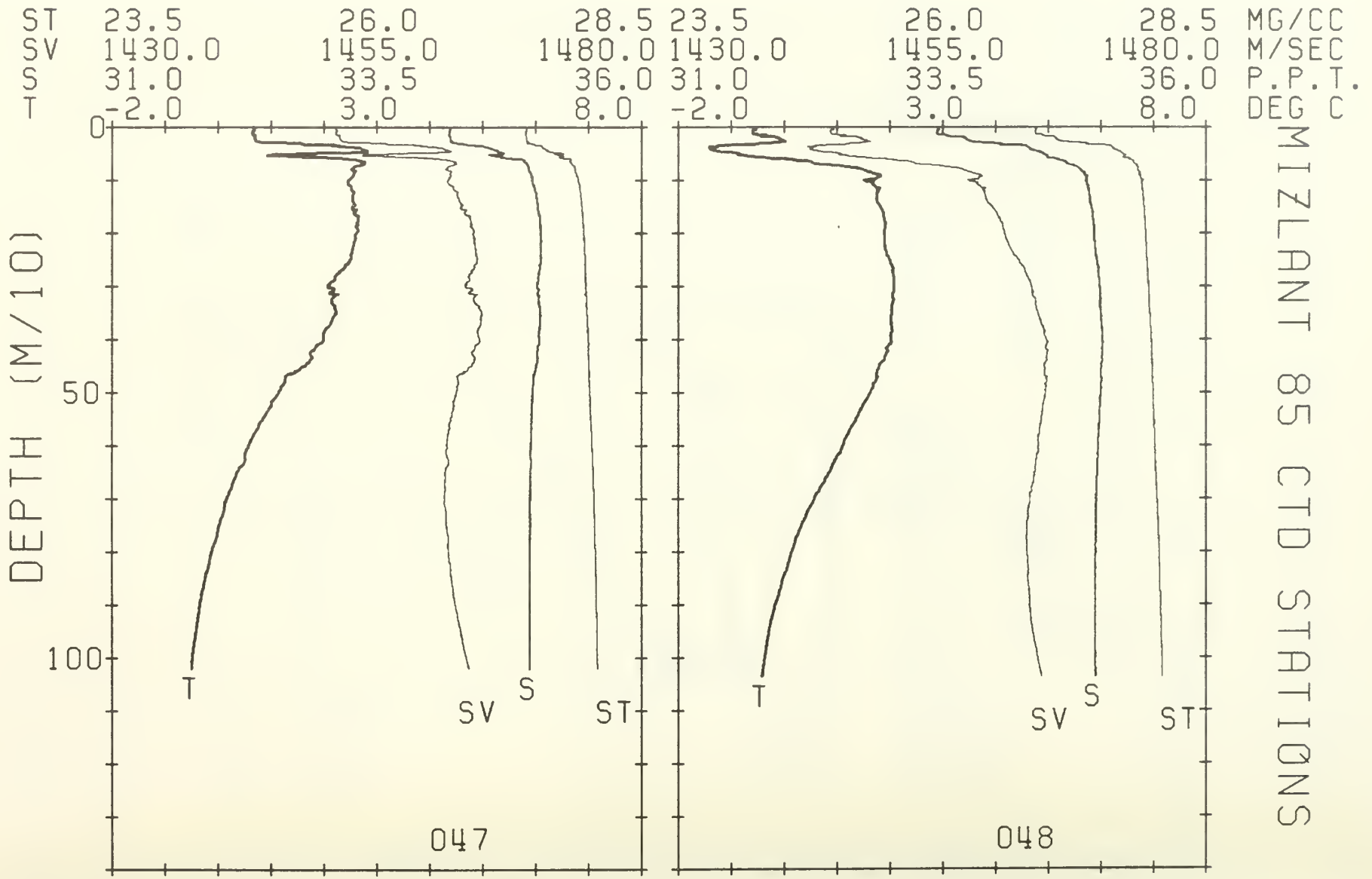

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
036
037
MIZLANT 85 CTD STATIONS

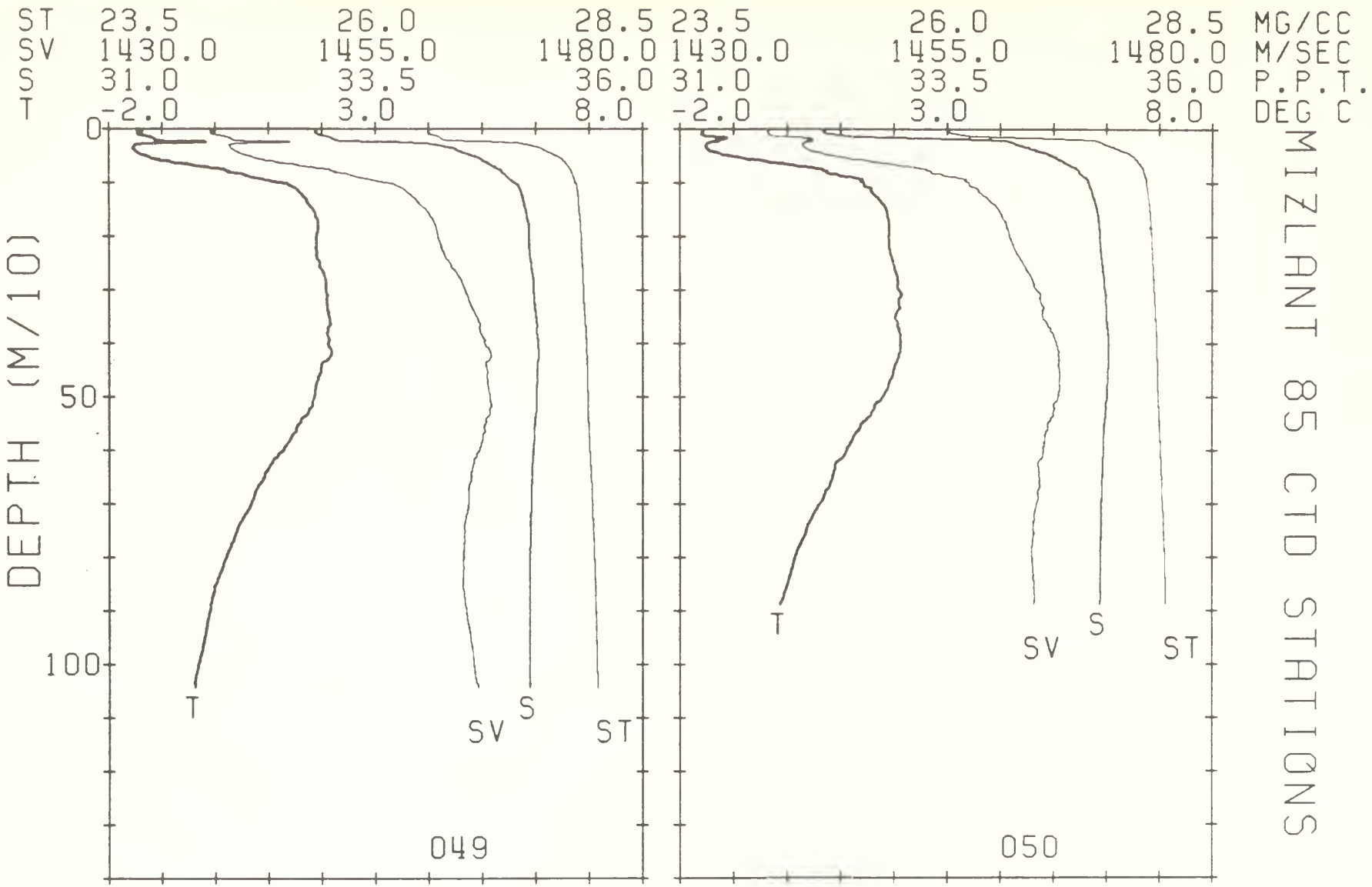

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
038
039
MIZLANT 85 CTD STATIONS

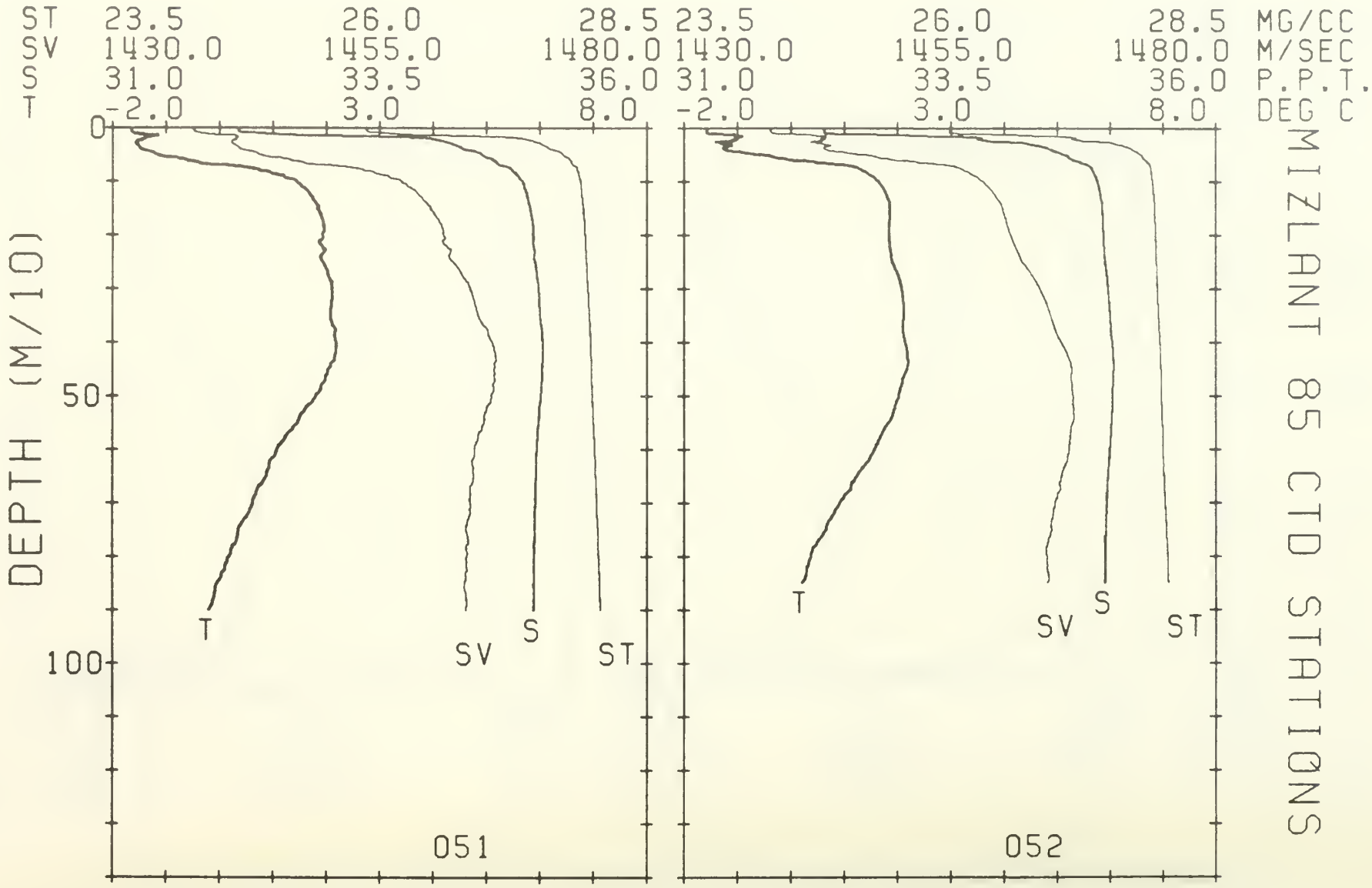

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
040
041
MIZLANT 85 CTD STATIONS

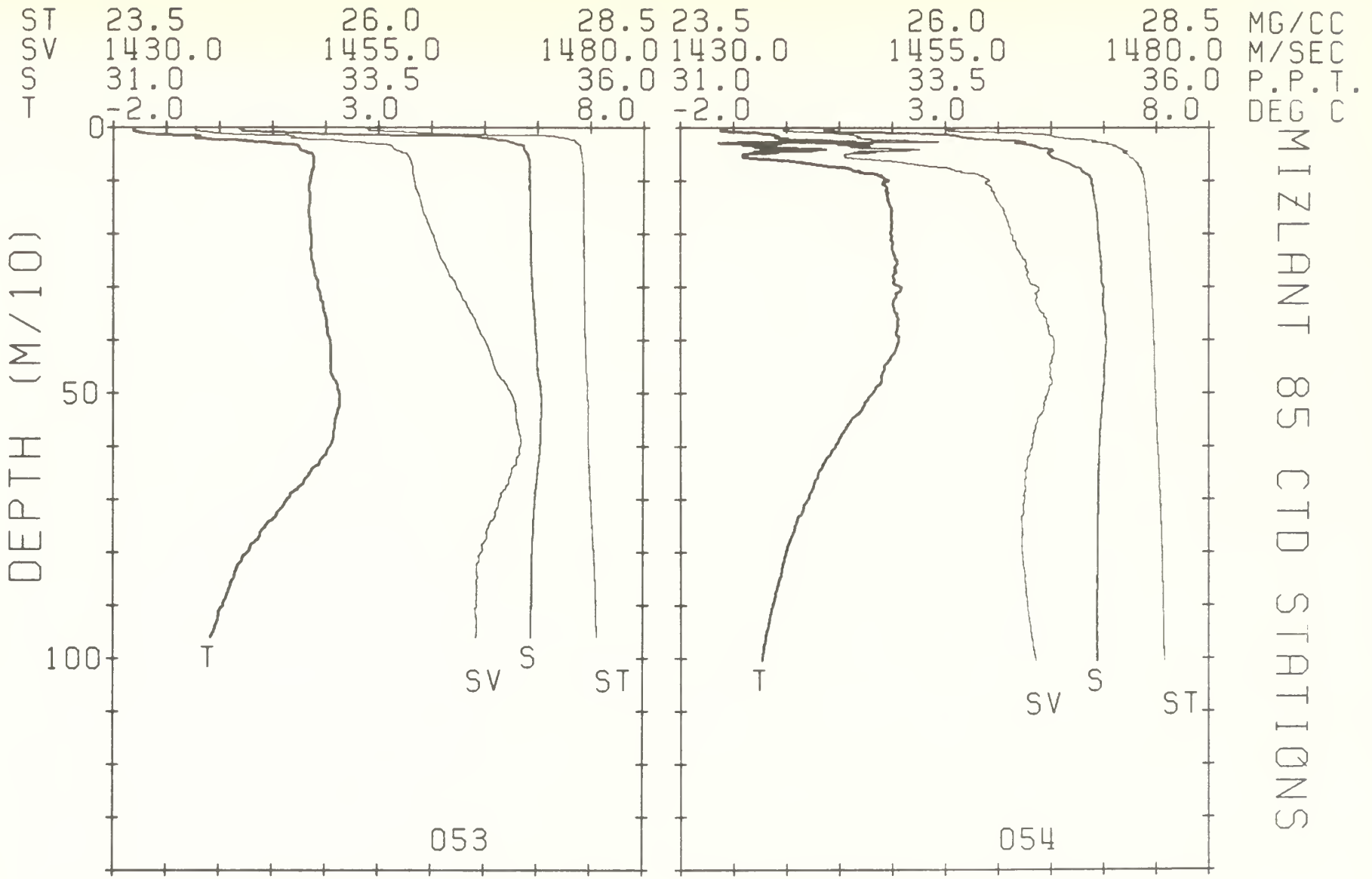

ST 23.5
SV 1425
S 31.0
T -2.0
0
700
28.5
1475
36.0
6.0
T
S
V
T
042
043
044
045
DEPTH (M)
MG/CC
M/SEC
P.P.T.
DEG C
MIZLANT85 C.T.D. STATIONS

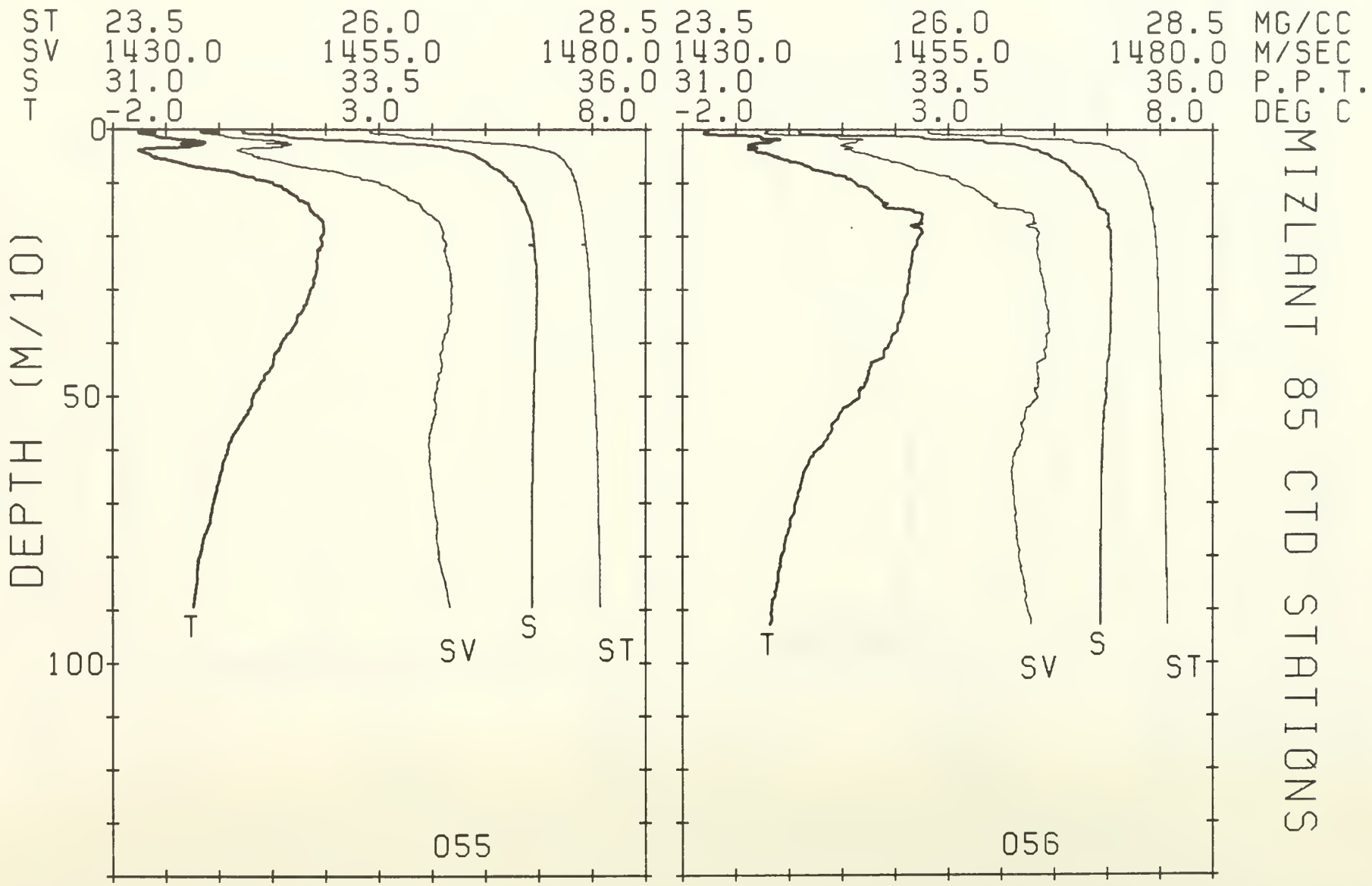
MIZLANT85 C.T.D. STATIONS

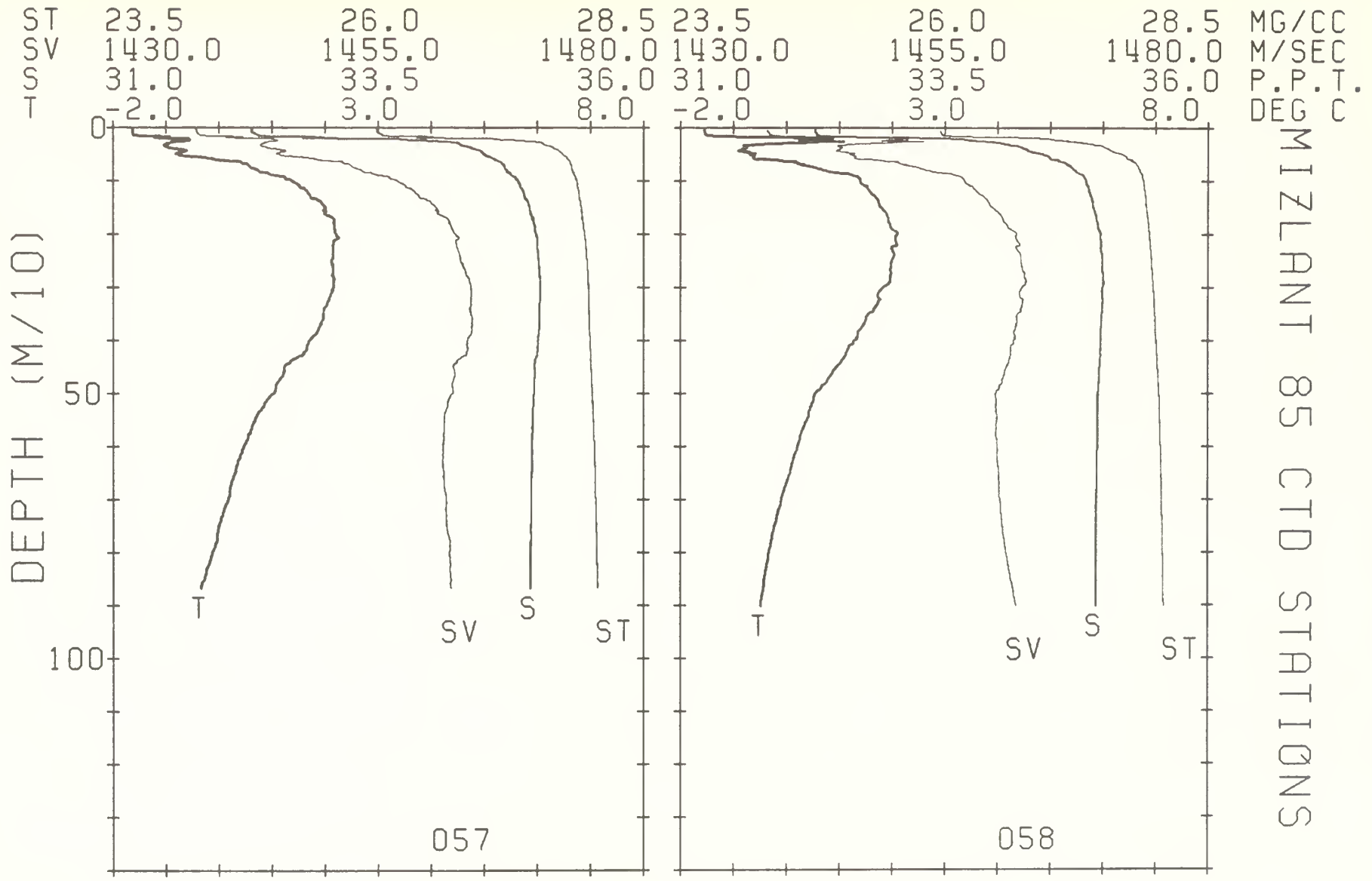

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
047
048
MIZLANT 85 CTD STATIONS

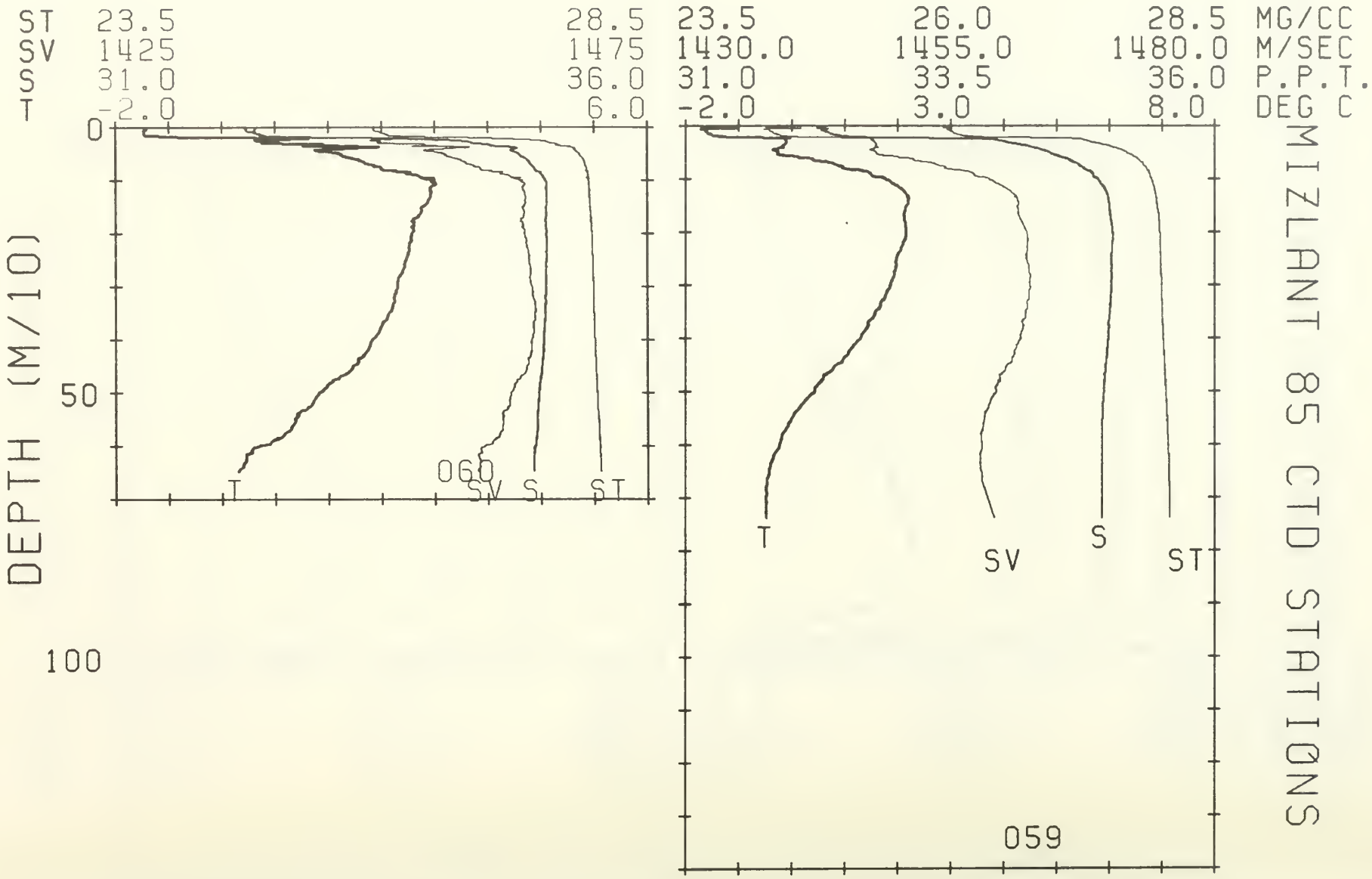

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
049
050
MIZLANT 85 CTD STATIONS

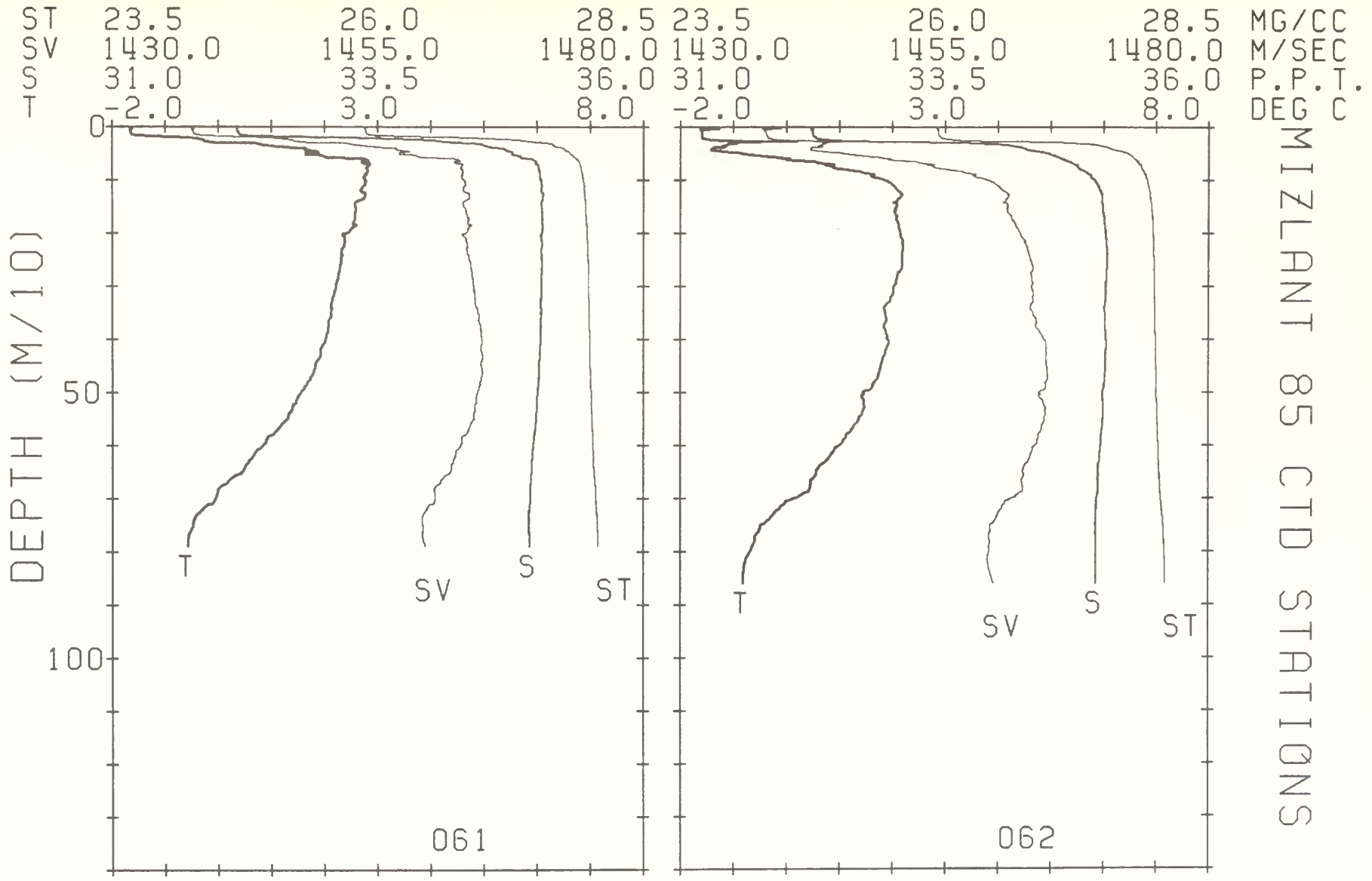

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
051
052
MIZLANT 85 CTD STATIONS

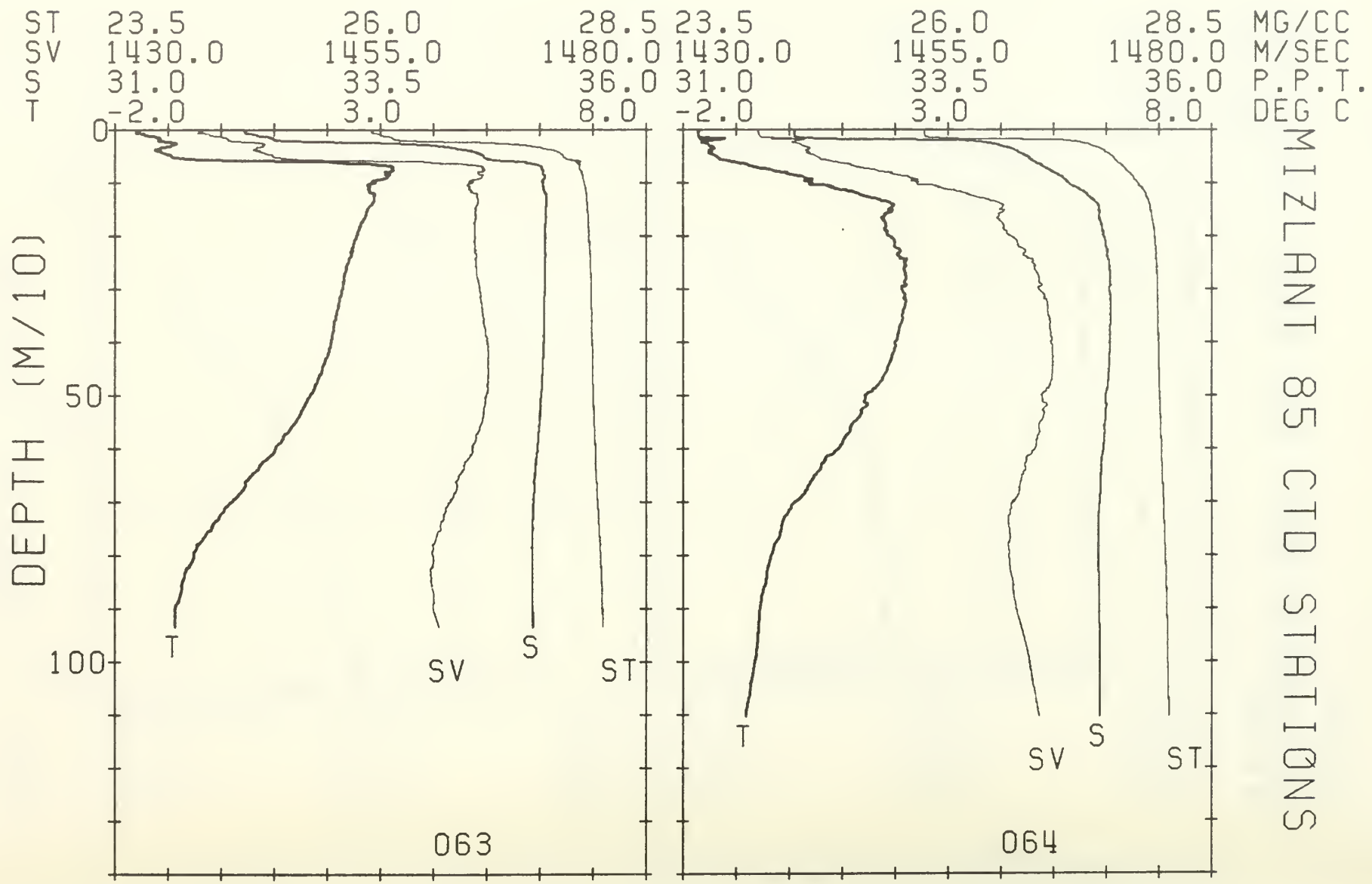

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
053
054
MIZLANT 85 CTD STATIONS

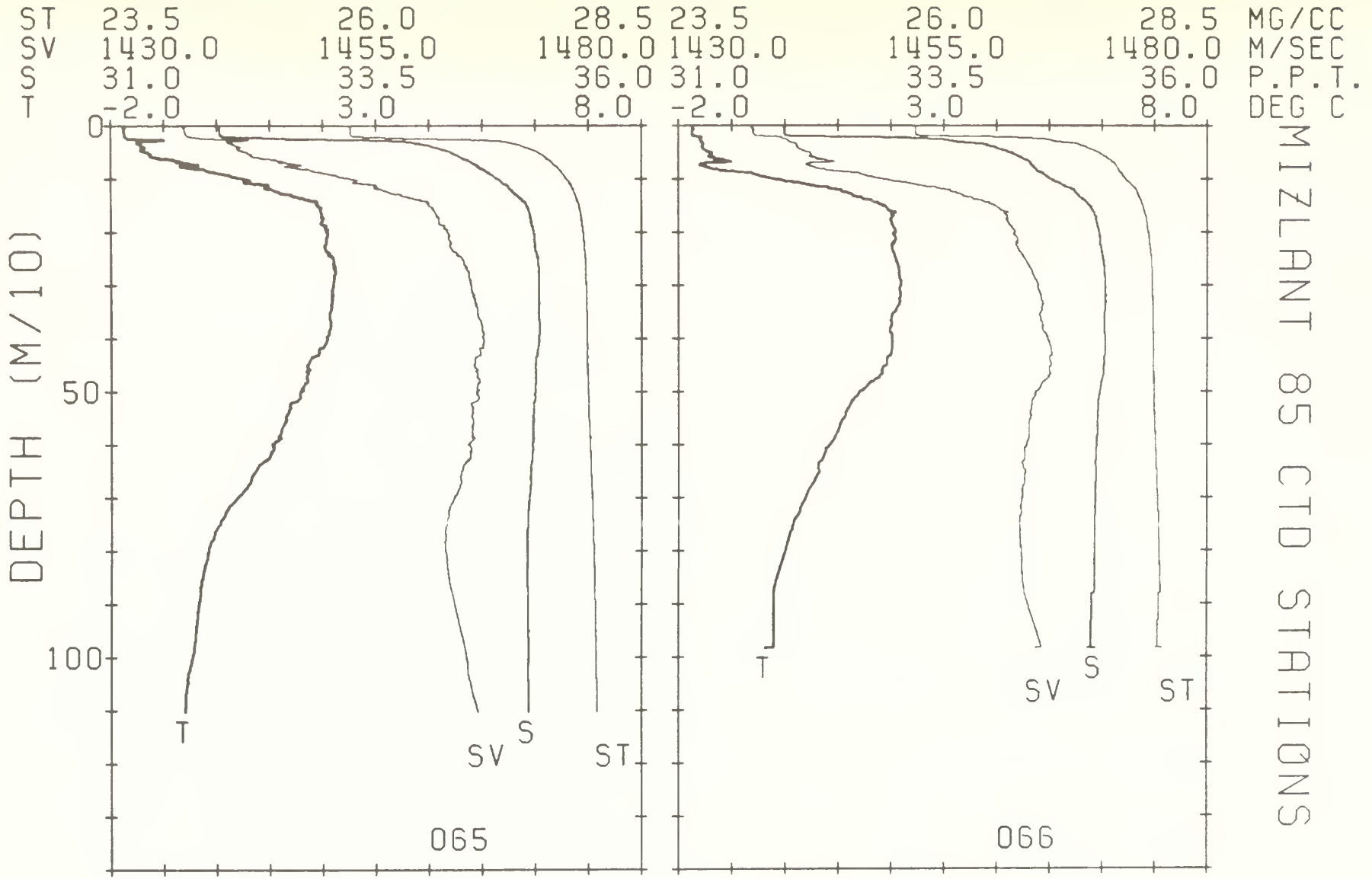

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
055
056
MIZLANT 85 CTD STATIONS

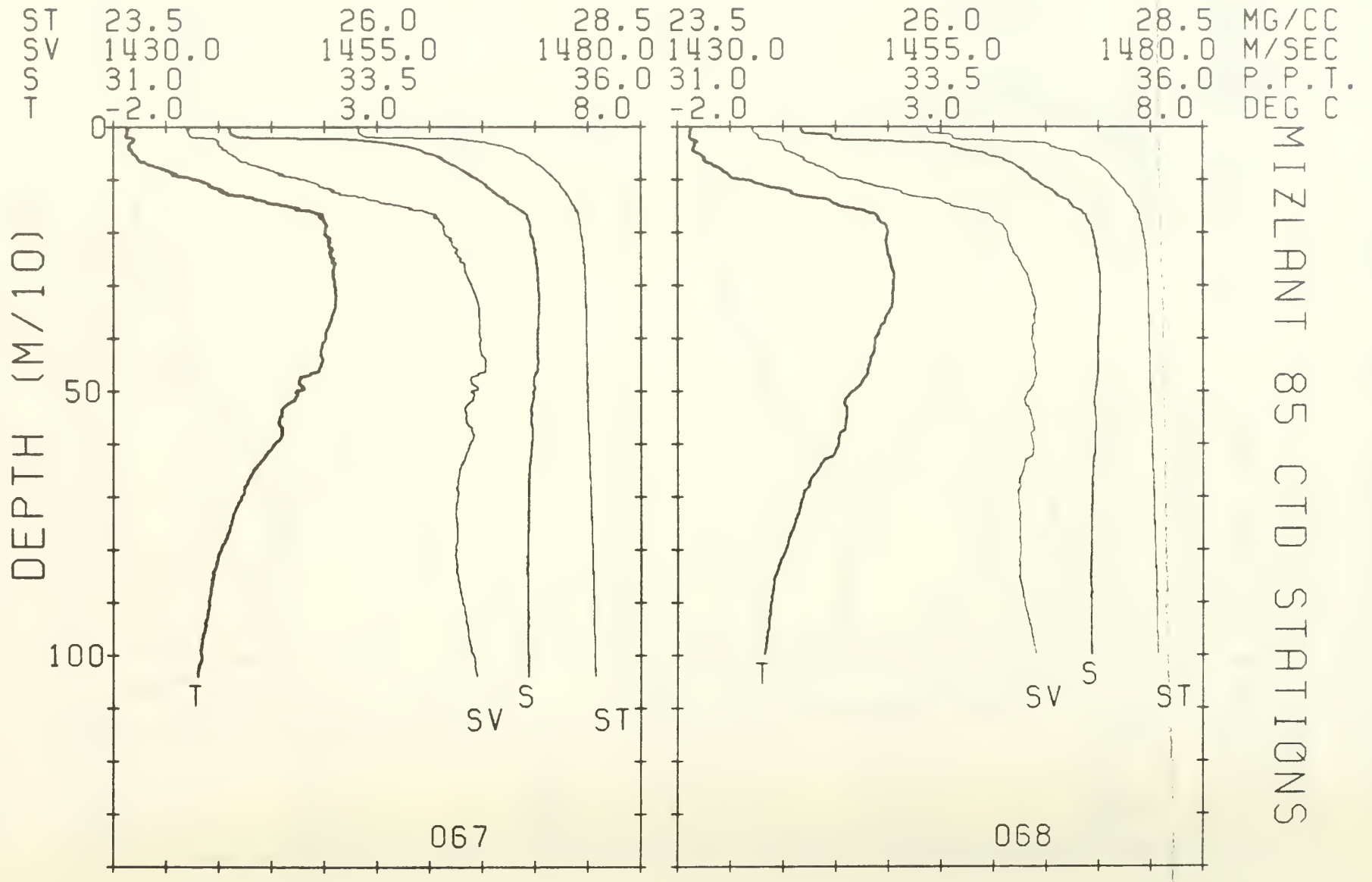

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
057
058
MIZLANT 85 CTD STATIONS

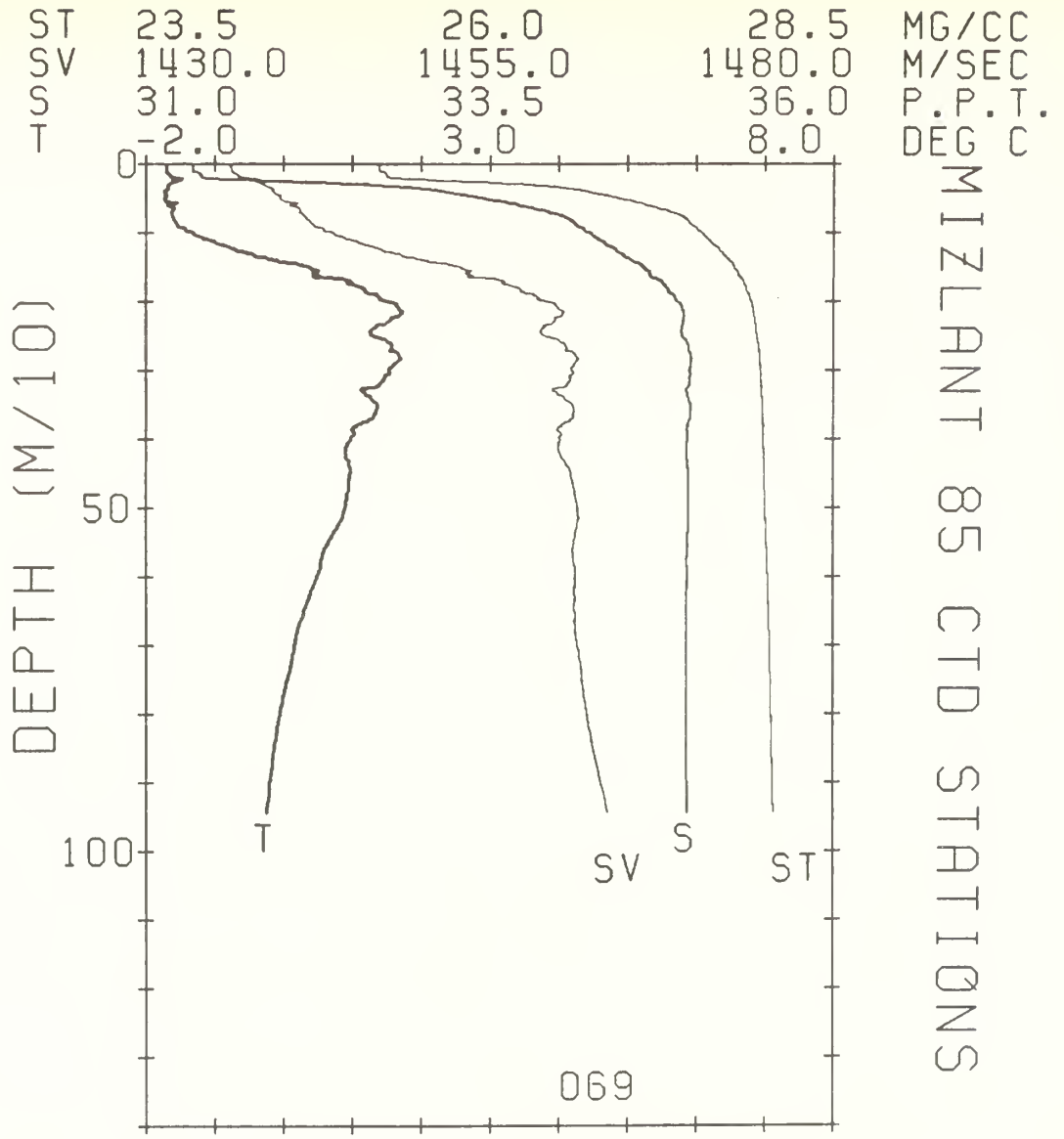

ST 23.5 28.5
SV 1425 1475
S 31.0 36.0
T -2.0 6.0
0
50
100
DEPTH (M/10)
T
SV
S
ST
060
23.5 26.0 28.5 MG/CC
1430.0 1455.0 1480.0 M/SEC
31.0 33.5 36.0 P.P.T.
-2.0 3.0 8.0 DEG C
T
SV
S
ST
059
MIZLANT 85 CTD STATIONS

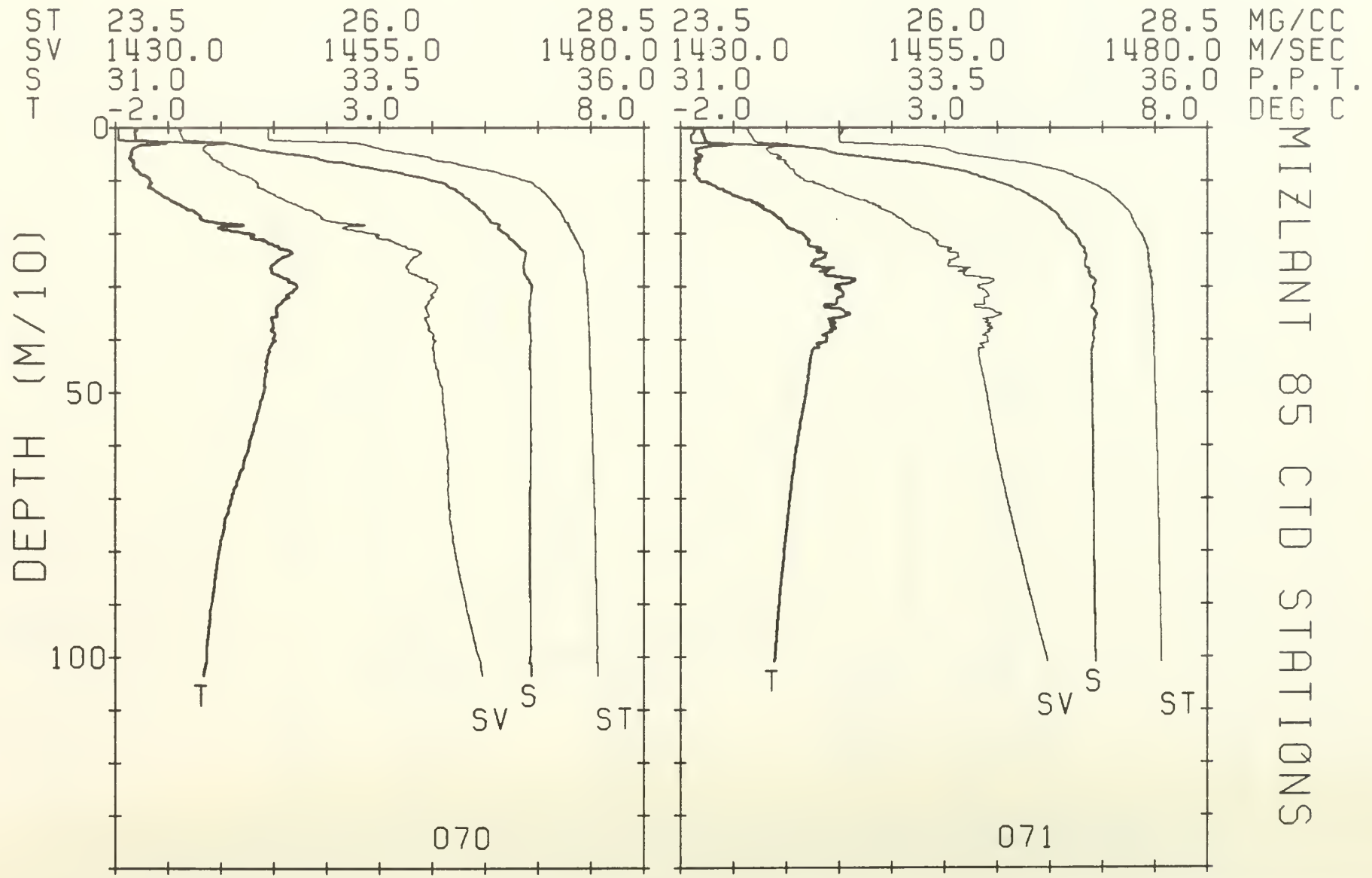

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
061
062
MIZLANT 85 CTD STATIONS

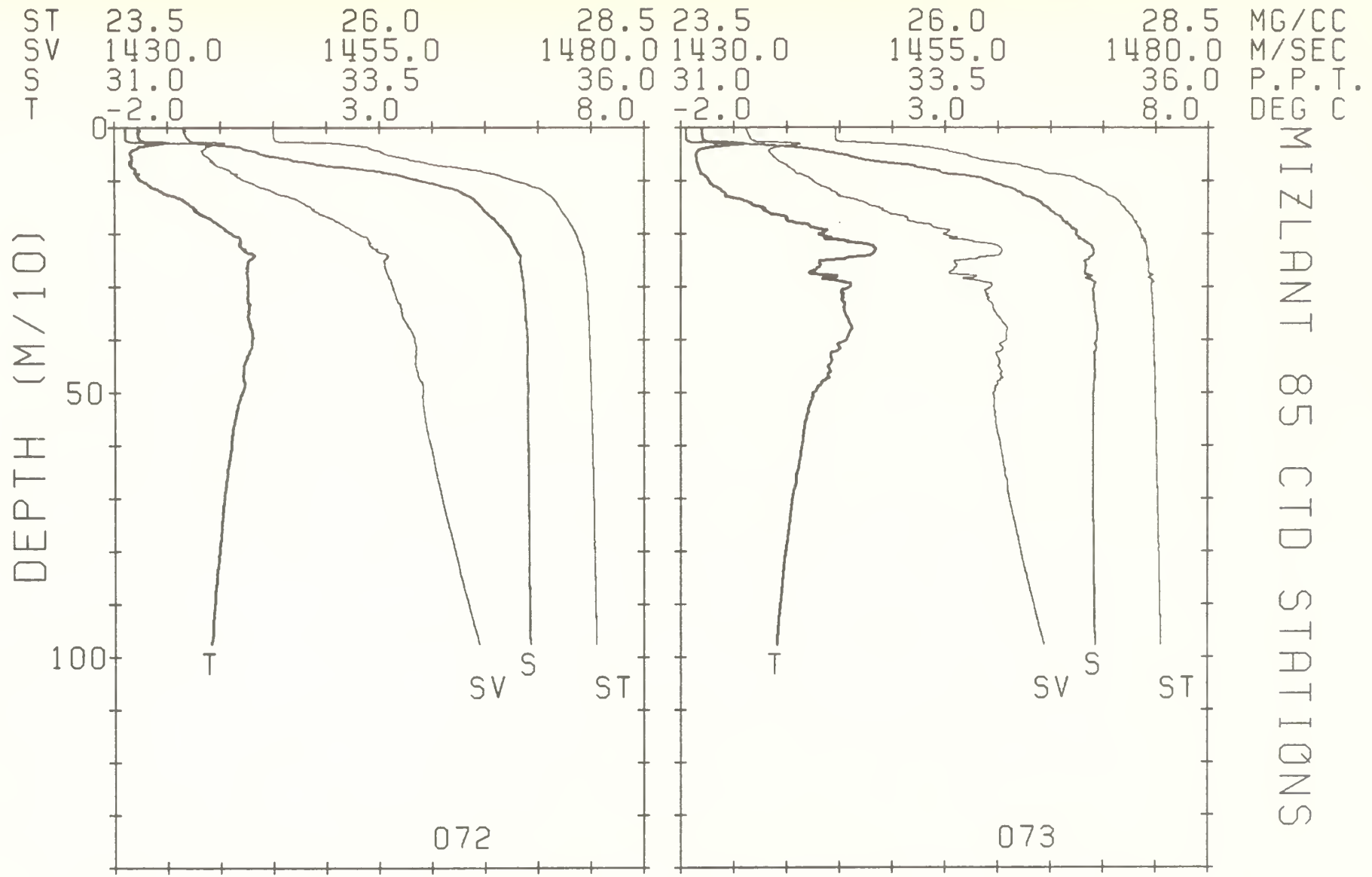

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
063
064
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
065
066
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
067
068
MIZLANT 85 CTD STATIONS

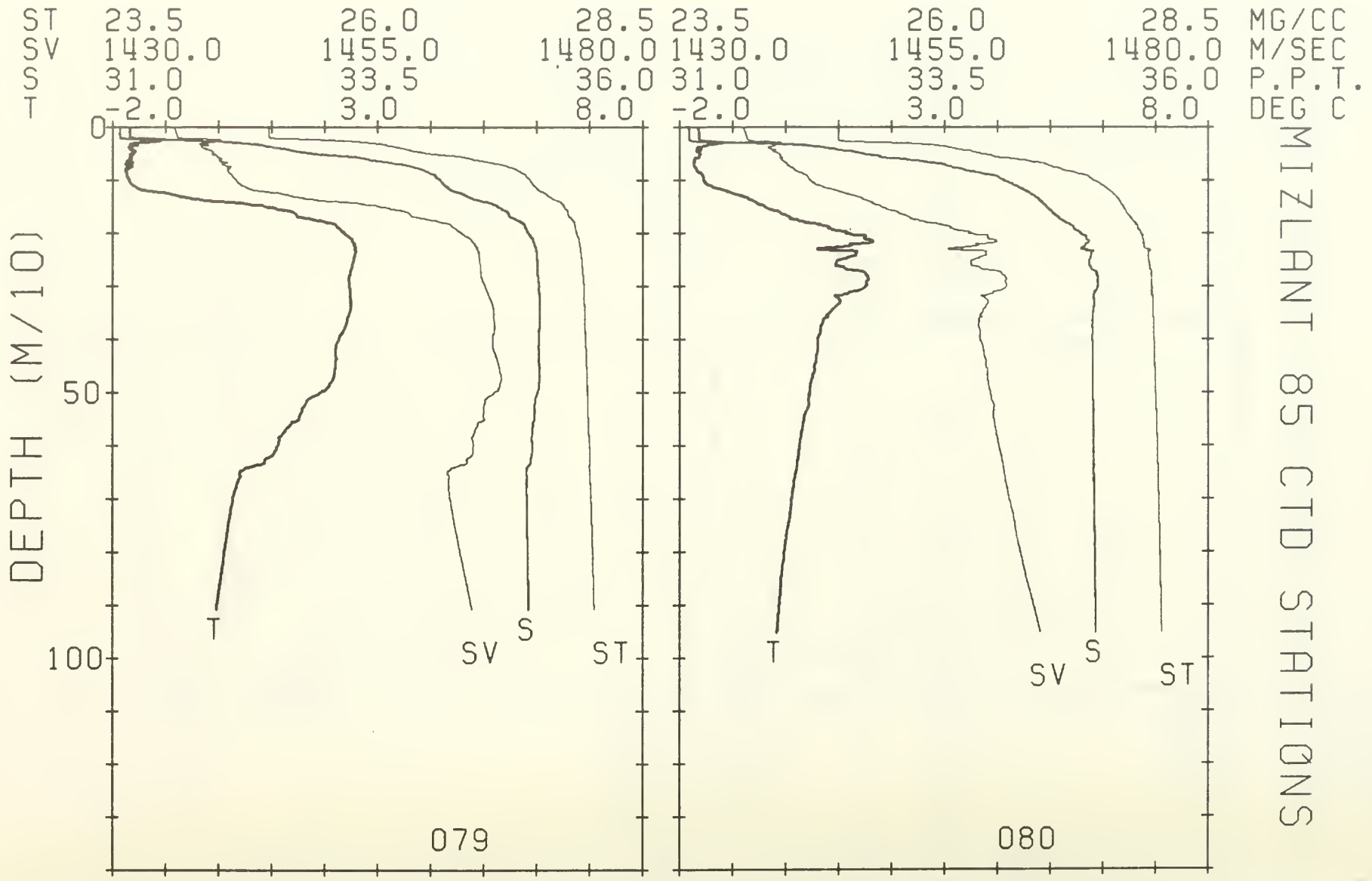

ST 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 DEG C
0
50
100
DEPTH (M/10)
T
SV
S
ST
069
MIZLANT 85 CTD STATIONS

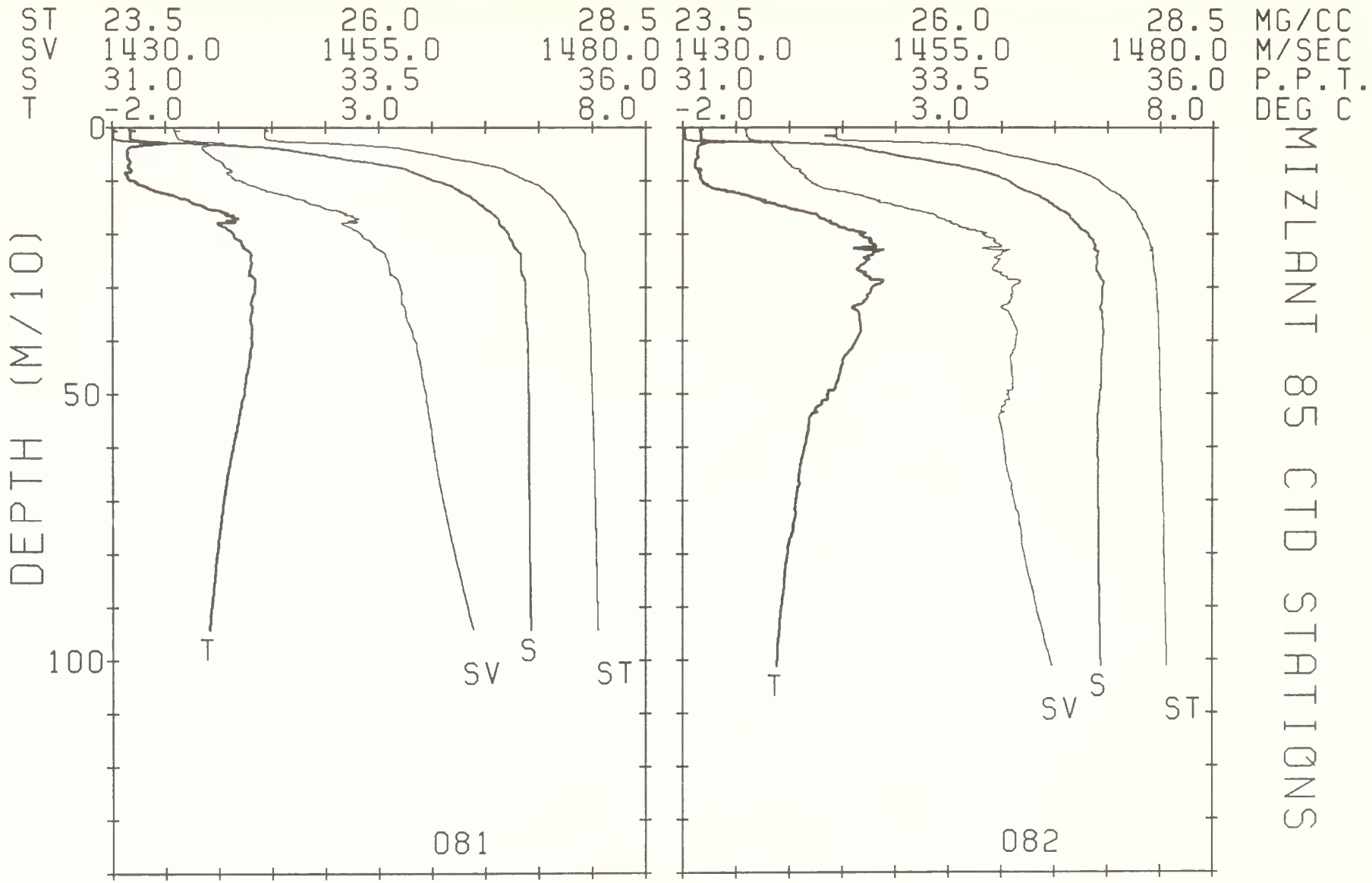

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
070
071
MIZLANT 85 CTD STATIONS

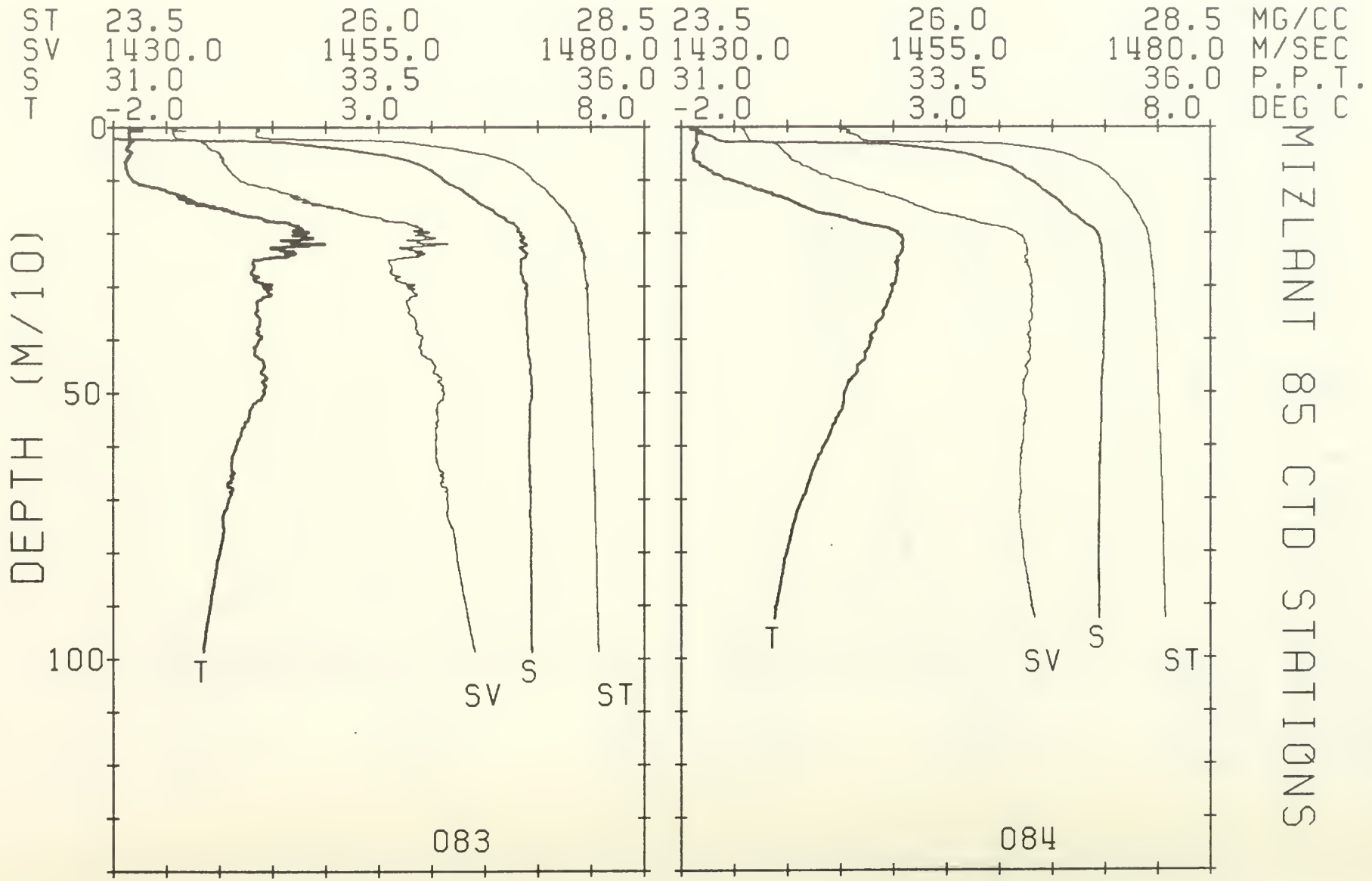

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
072
073
MIZLANT 85 CTD STATIONS

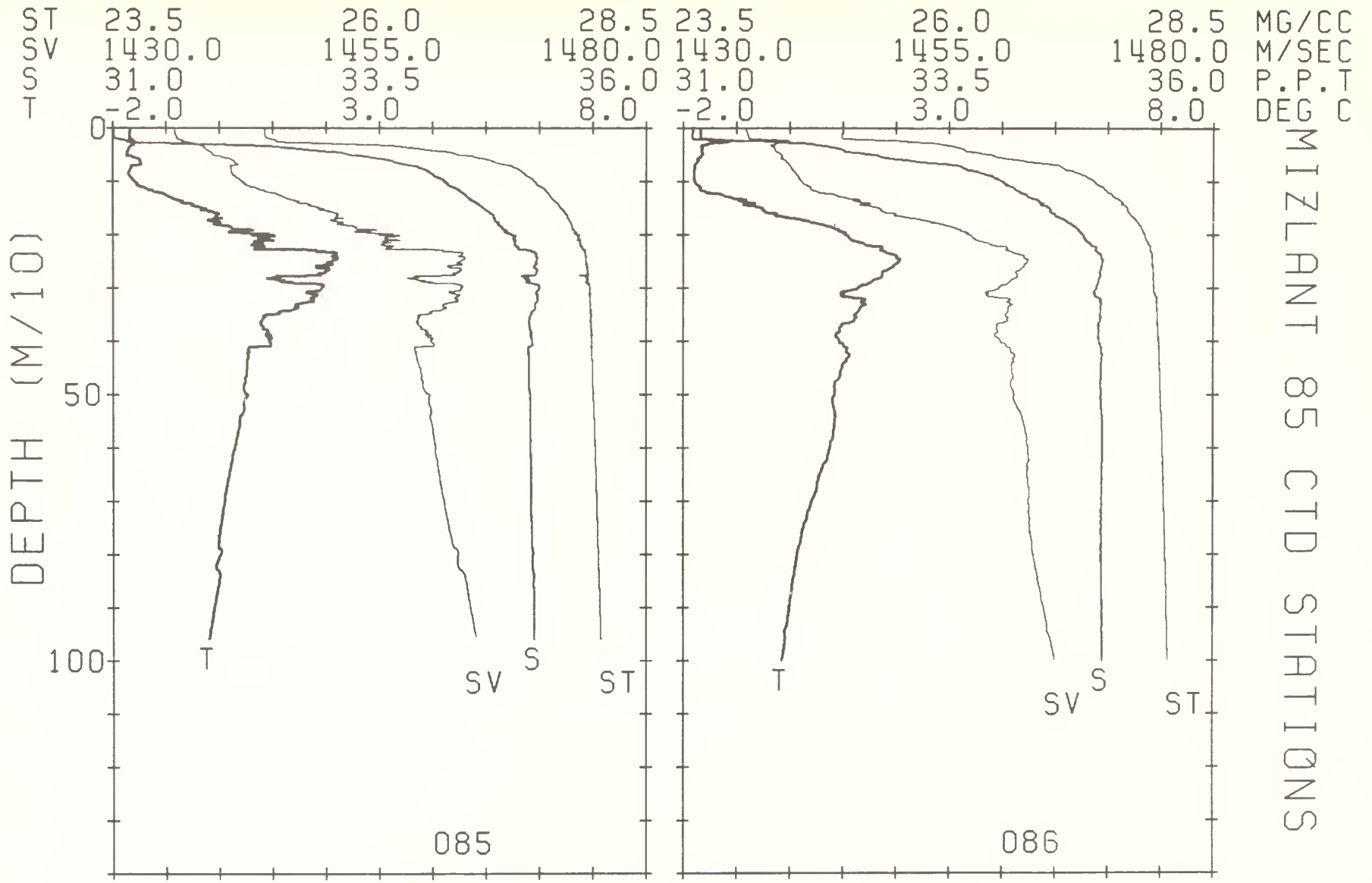
MIZLANT 85 CTD STATIONS
ST 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 DEG C
0
50
100
DEPTH (M/10)
ST
SV
S
T
074

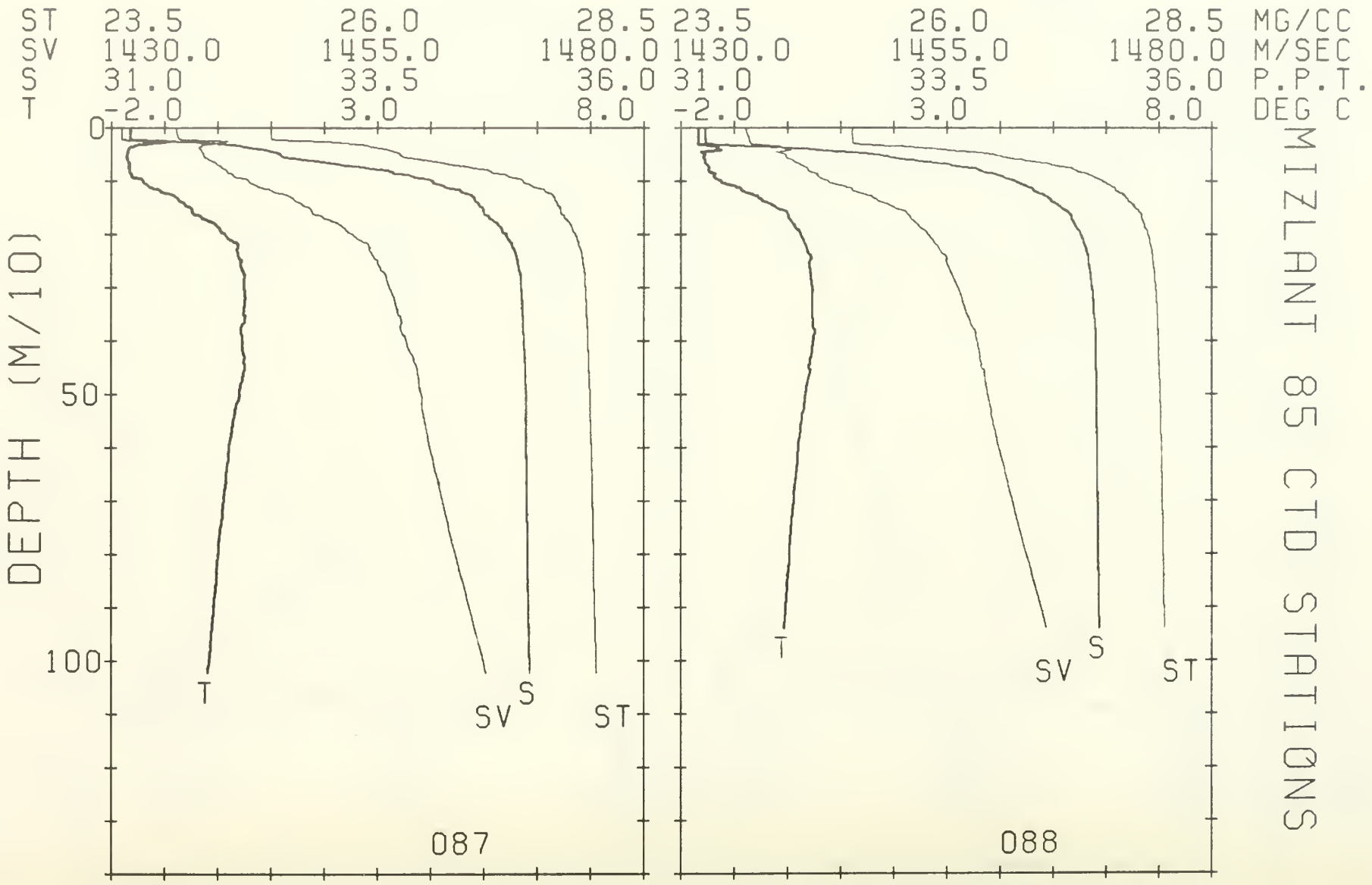
MIZLANT85 C.T.D. STATIONS

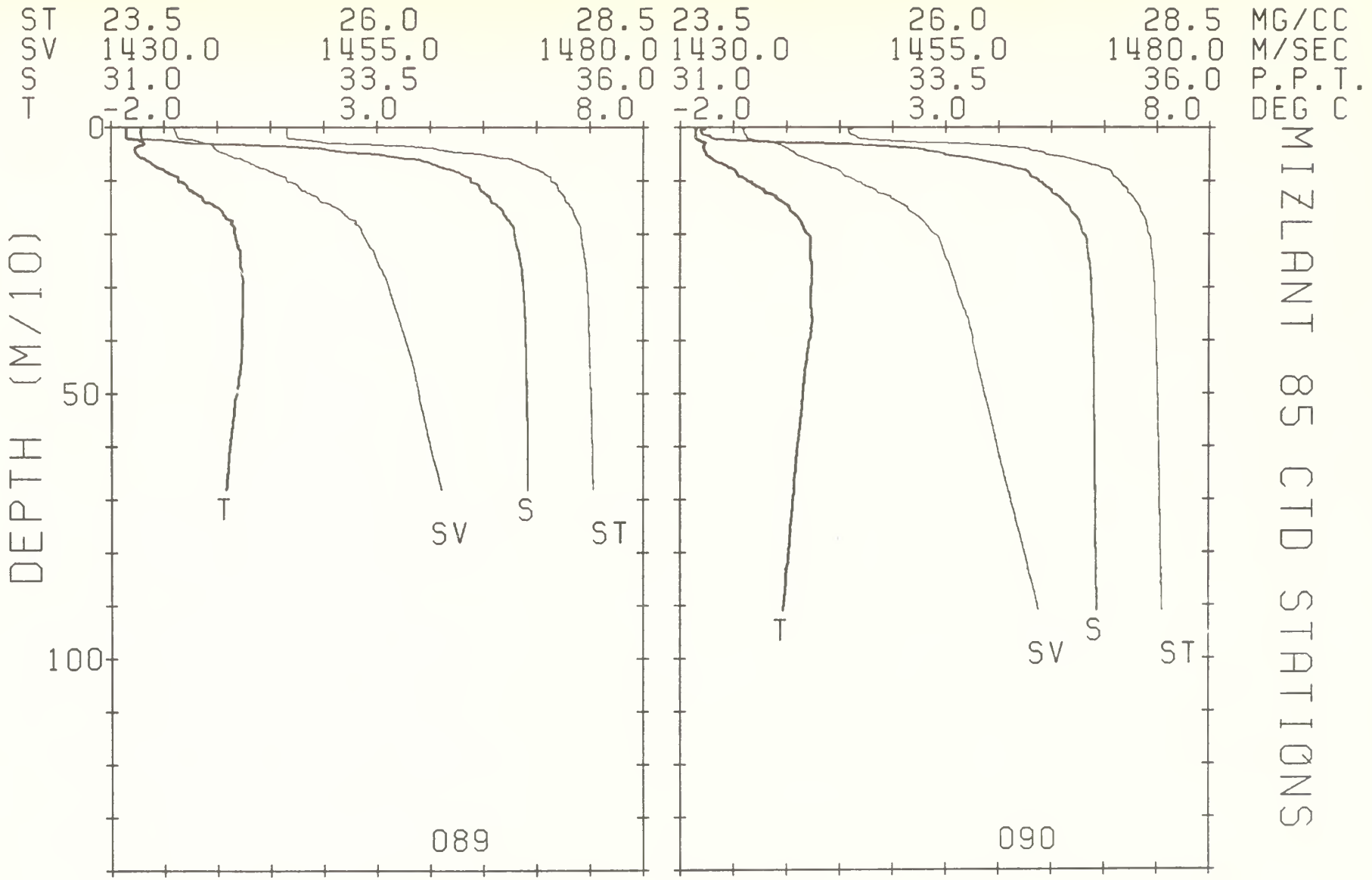

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
079
080
MIZLANT 85 CTD STATIONS

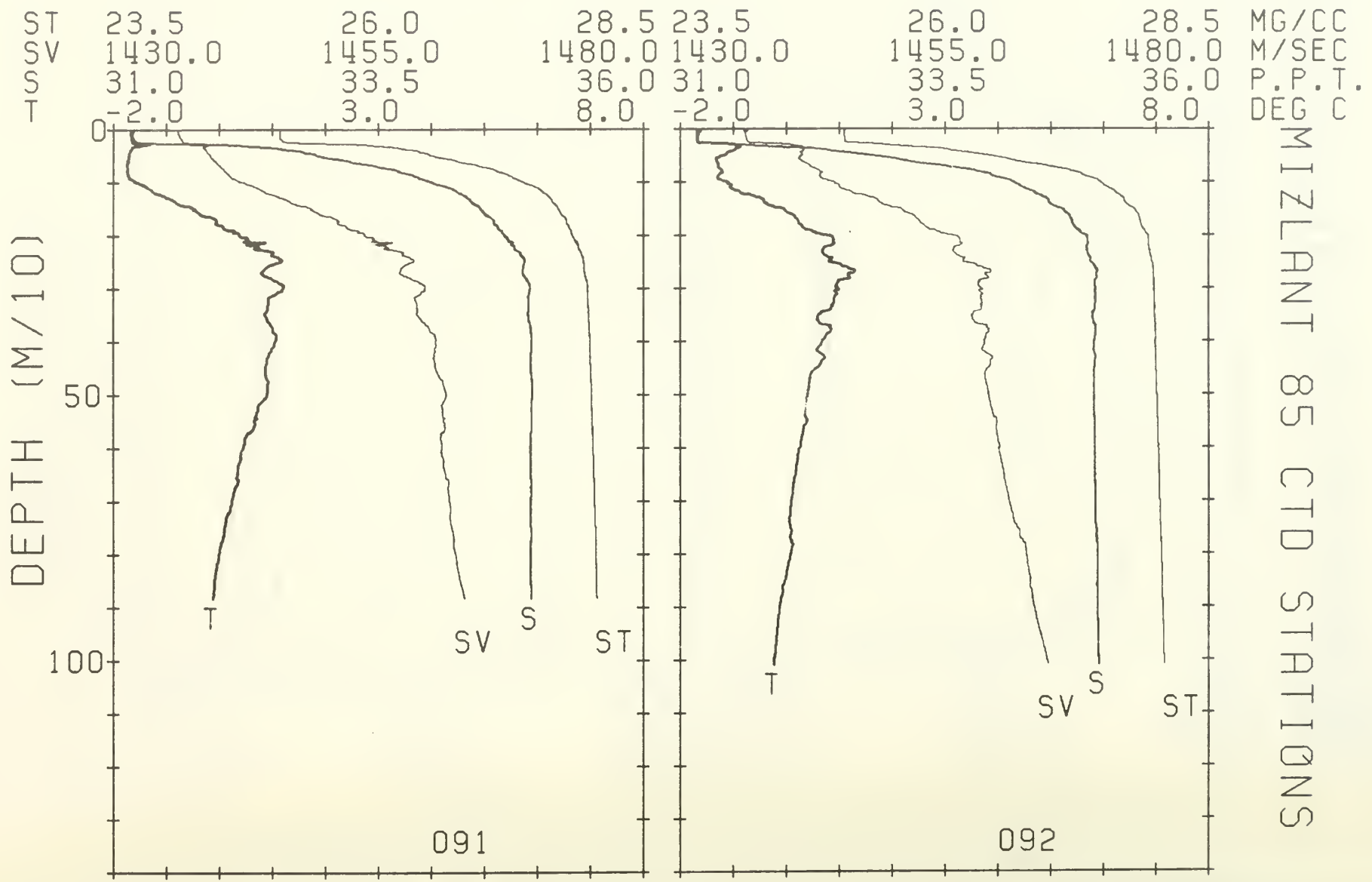

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
081
082
MIZLANT 85 CTD STATIONS

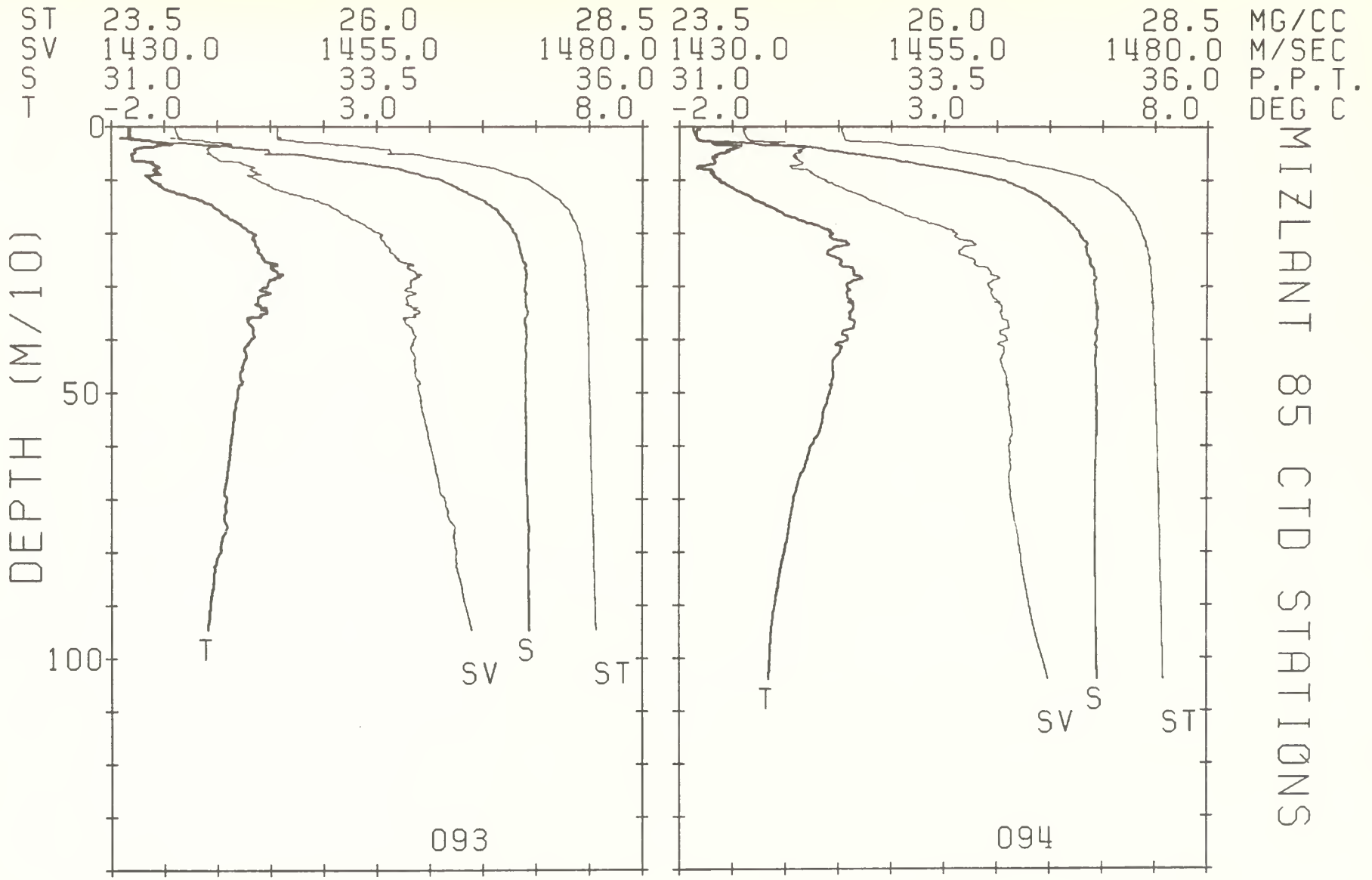

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
083
084
MIZLANT 85 CTD STATIONS

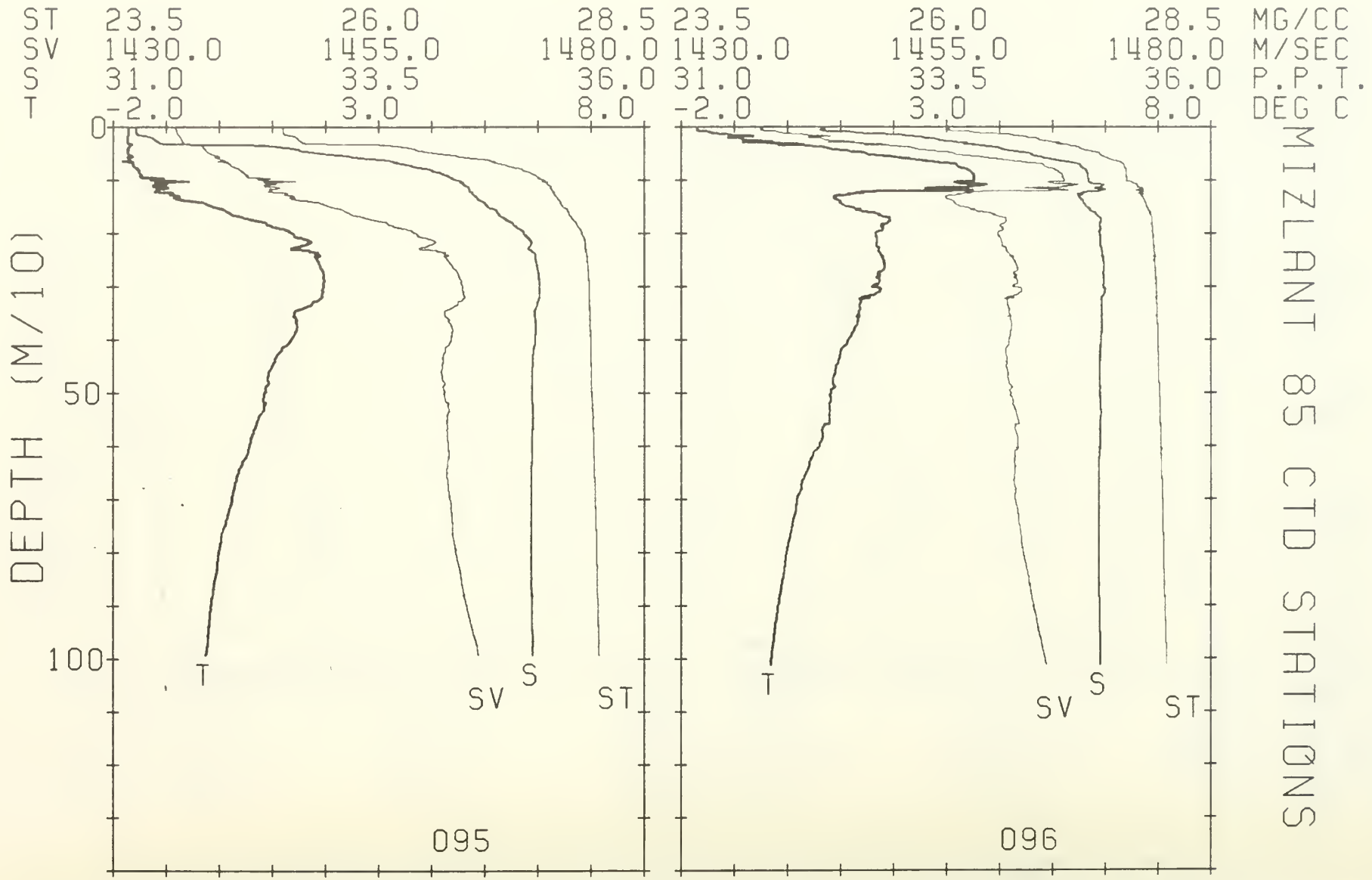

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
085
086
MIZLANT 85 CTD STATIONS

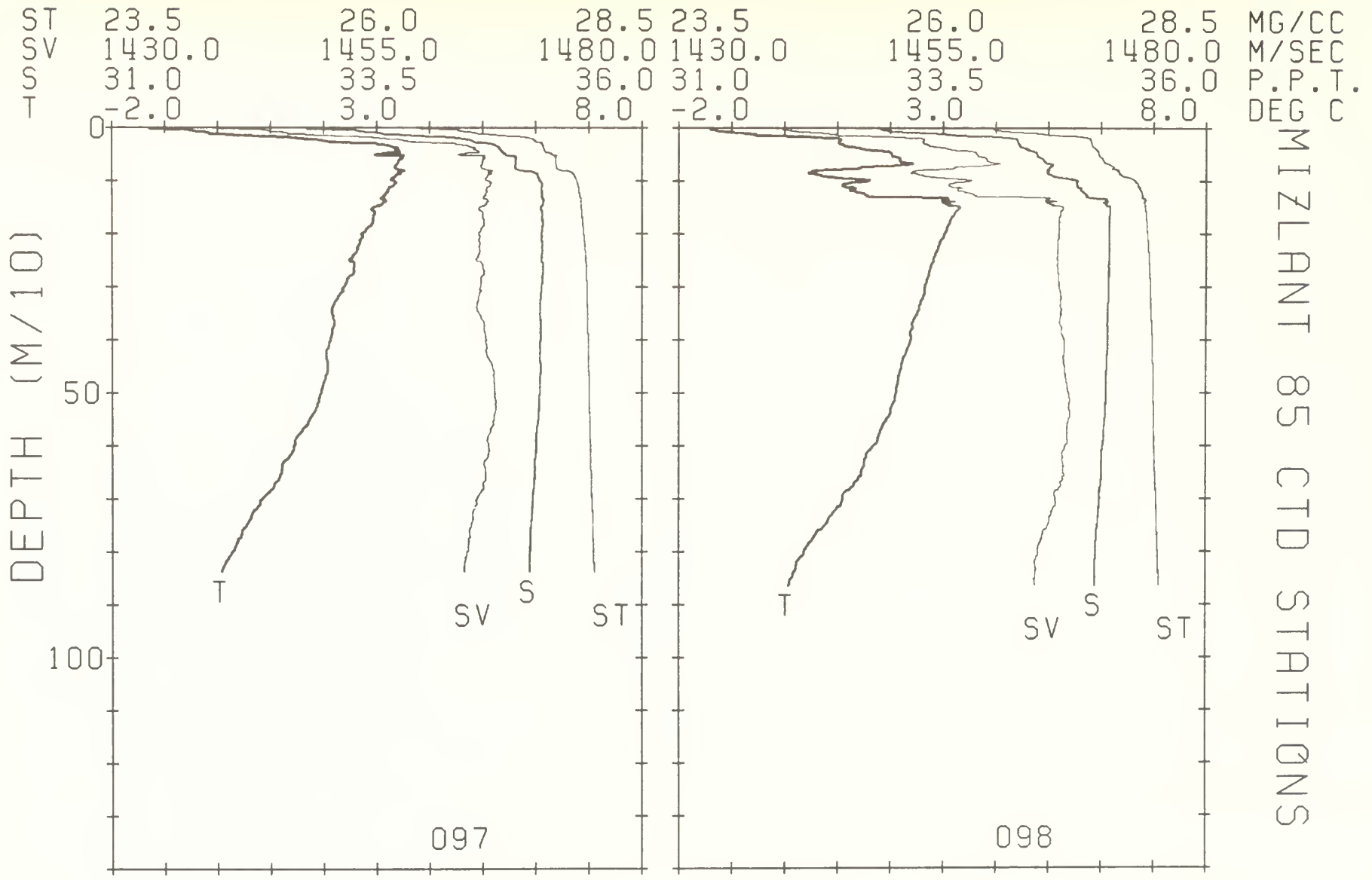

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
087
088
MIZLANT 85 CTD STATIONS

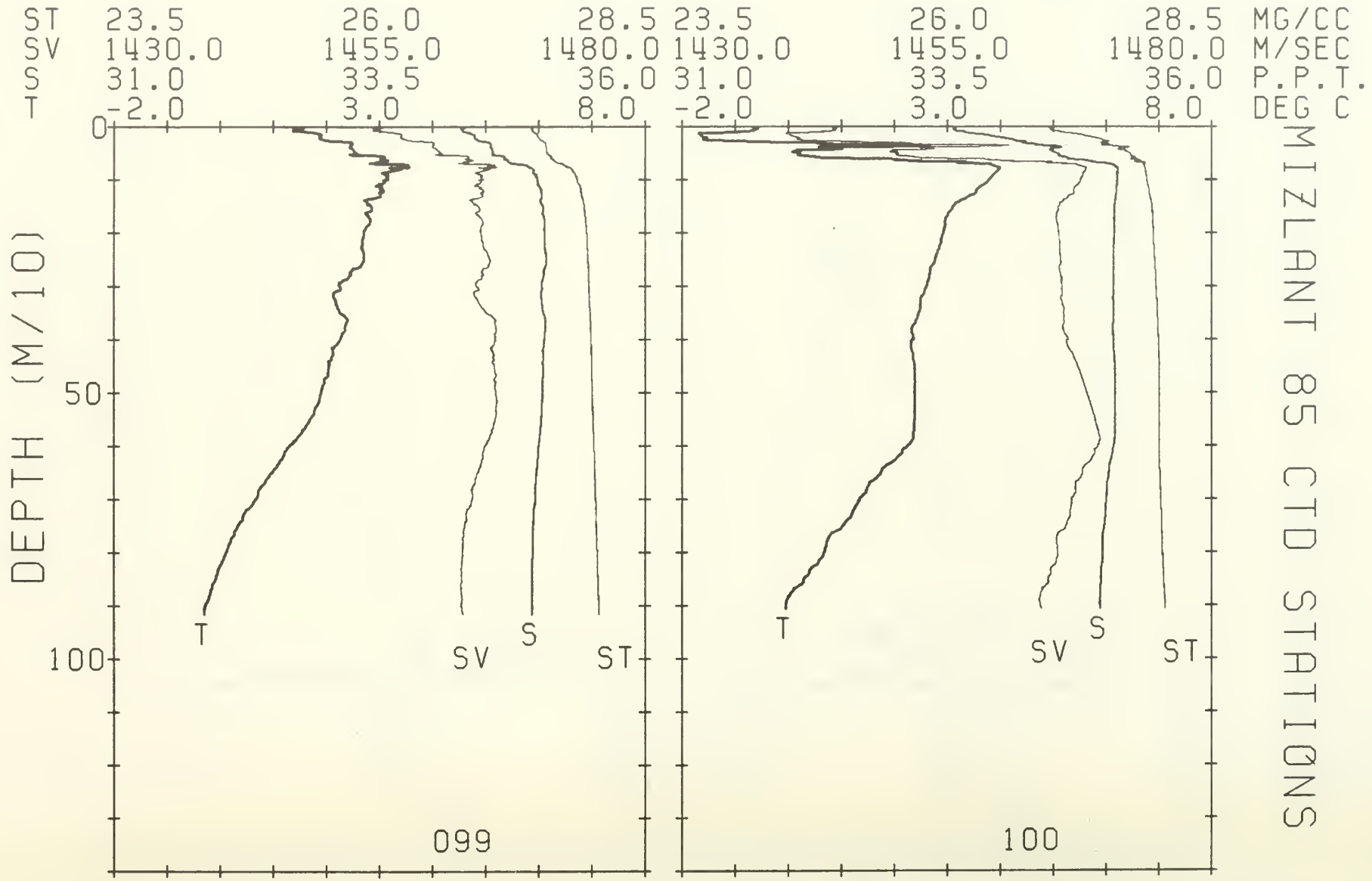

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
089
090
MIZLANT 85 CTD STATIONS

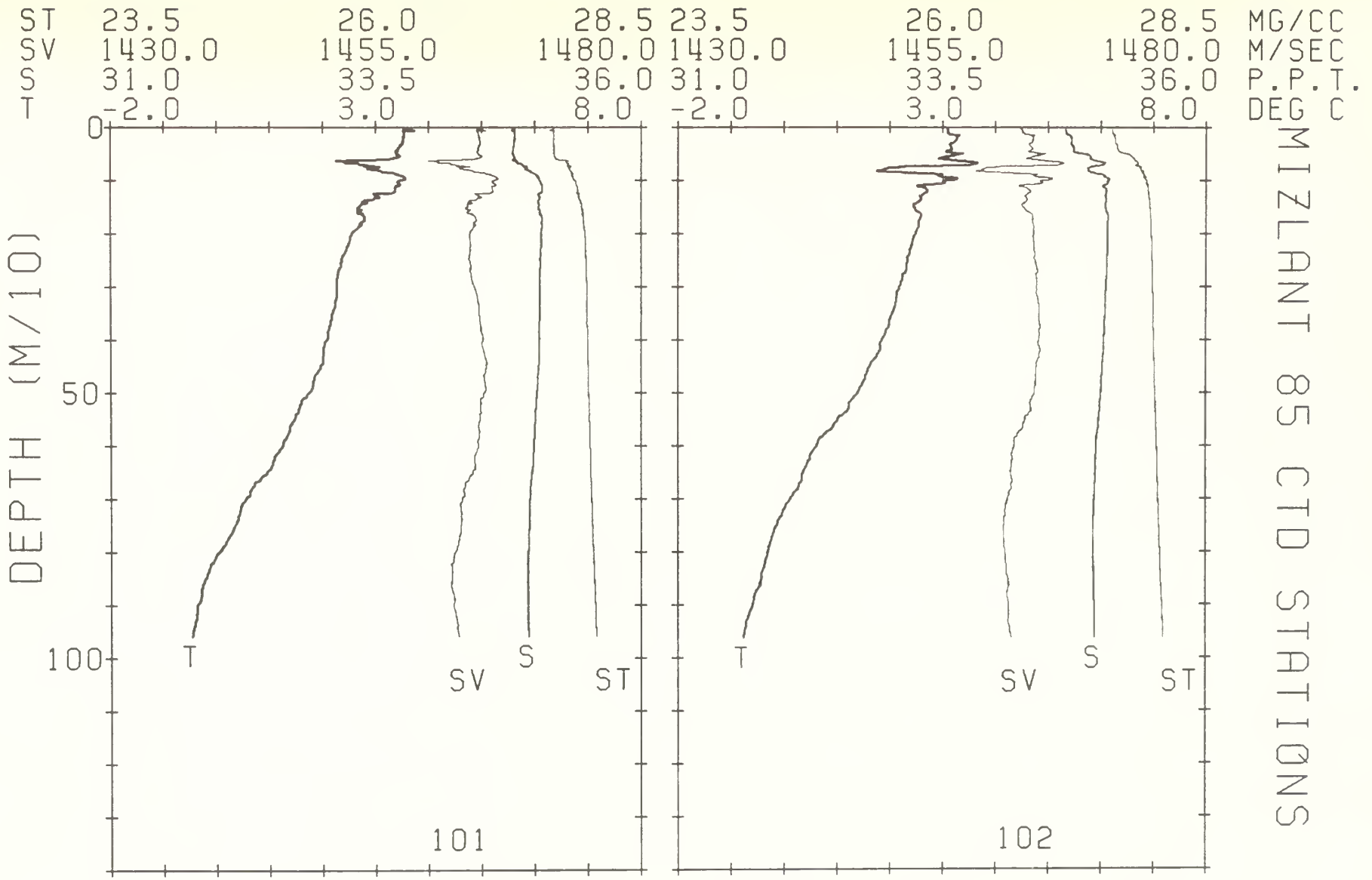

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
091
092
MIZLANT 85 CTD STATIONS

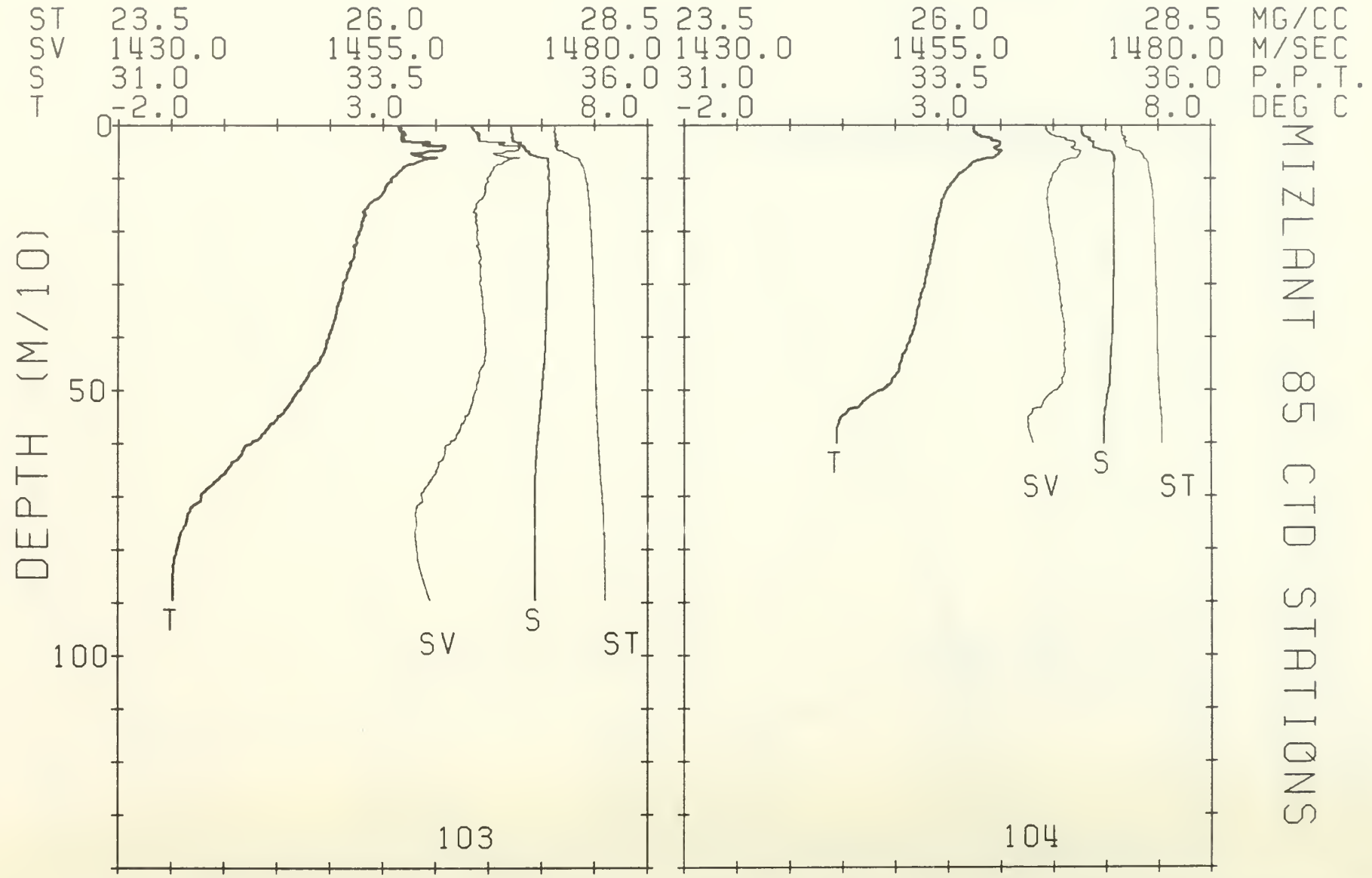

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
093
094
MIZLANT 85 CTD STATIONS

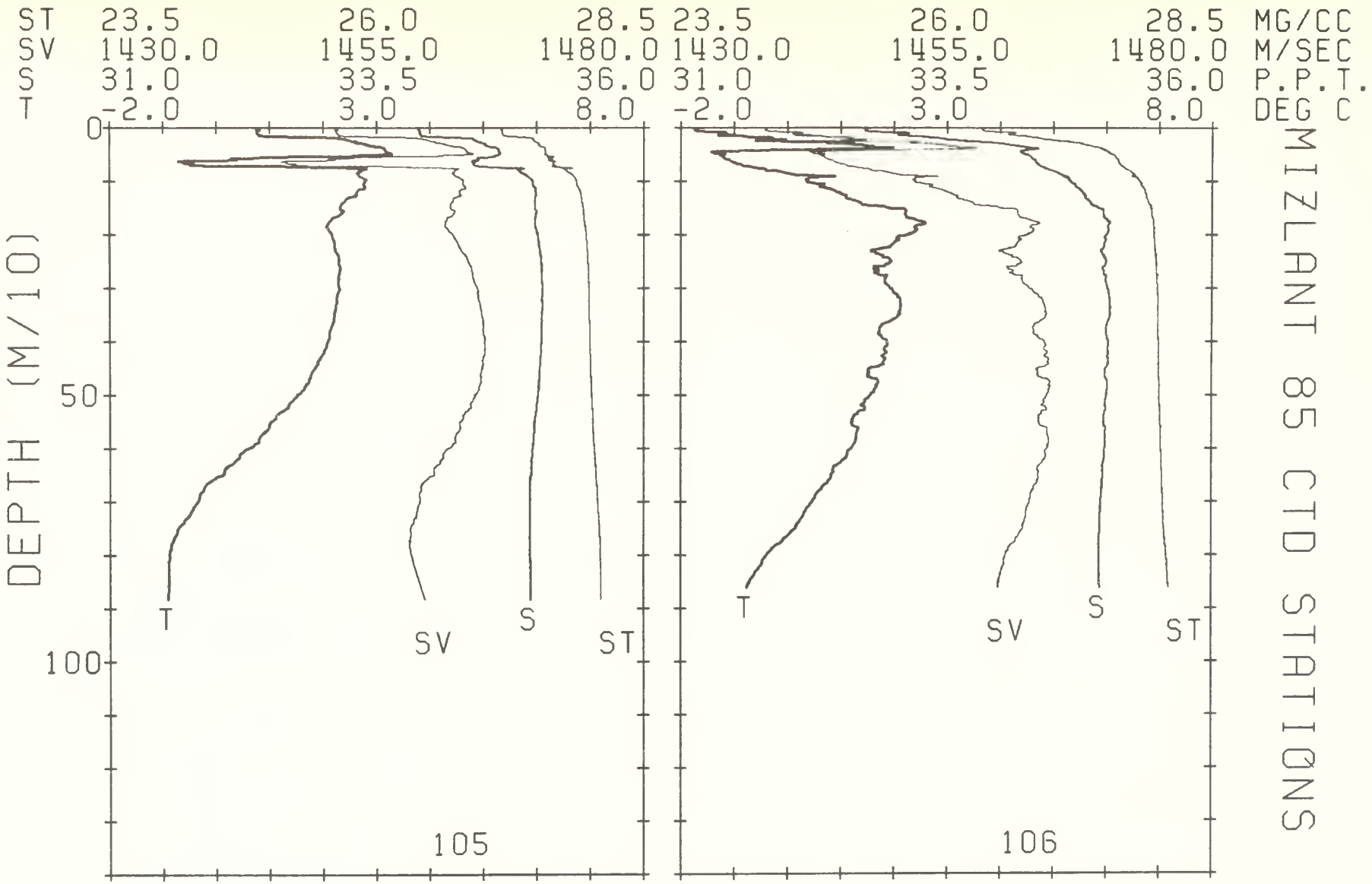

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
095
096
MIZLANT 85 CTD STATIONS

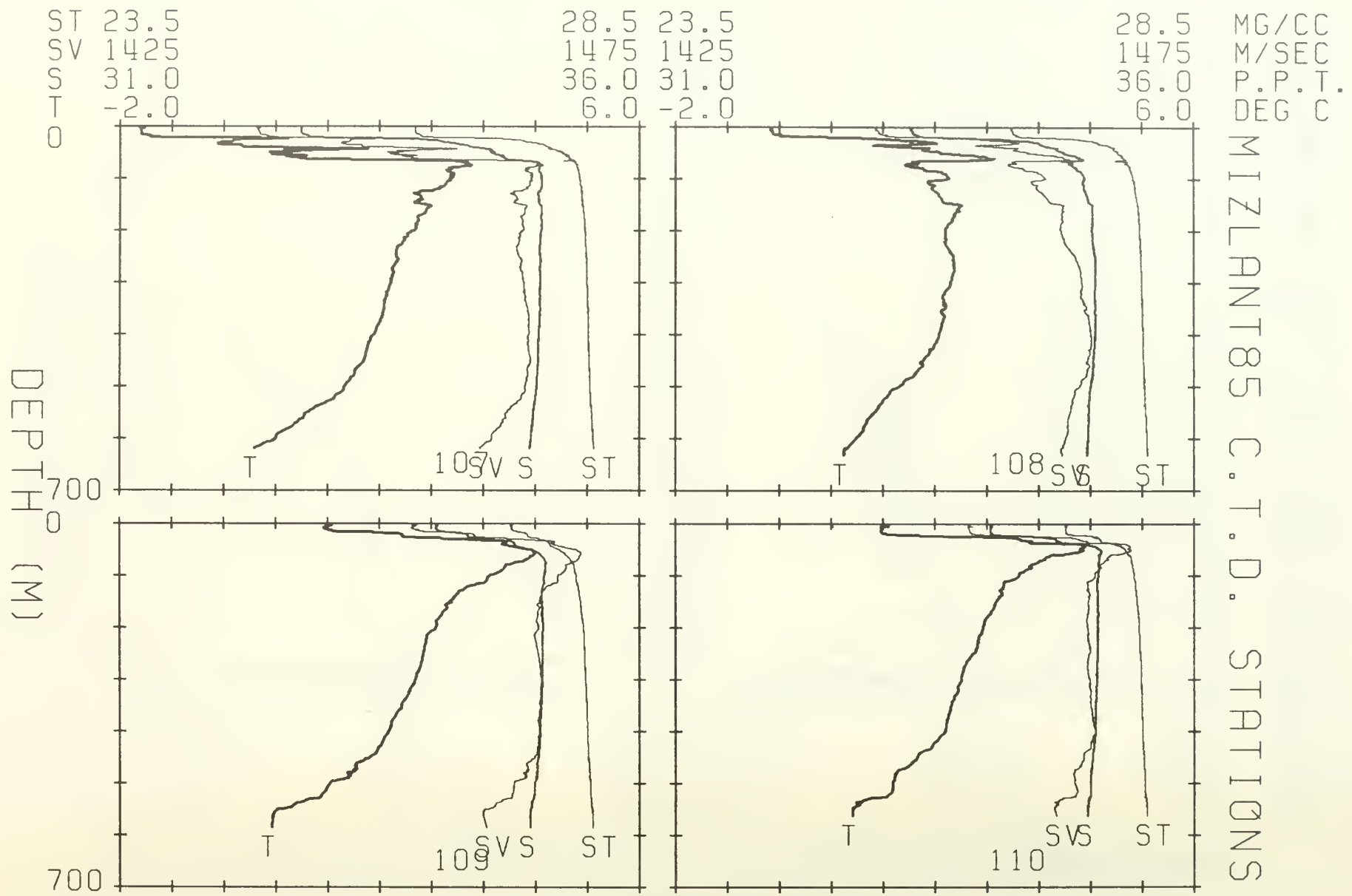

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
097
098
MIZLANT 85 CTD STATIONS

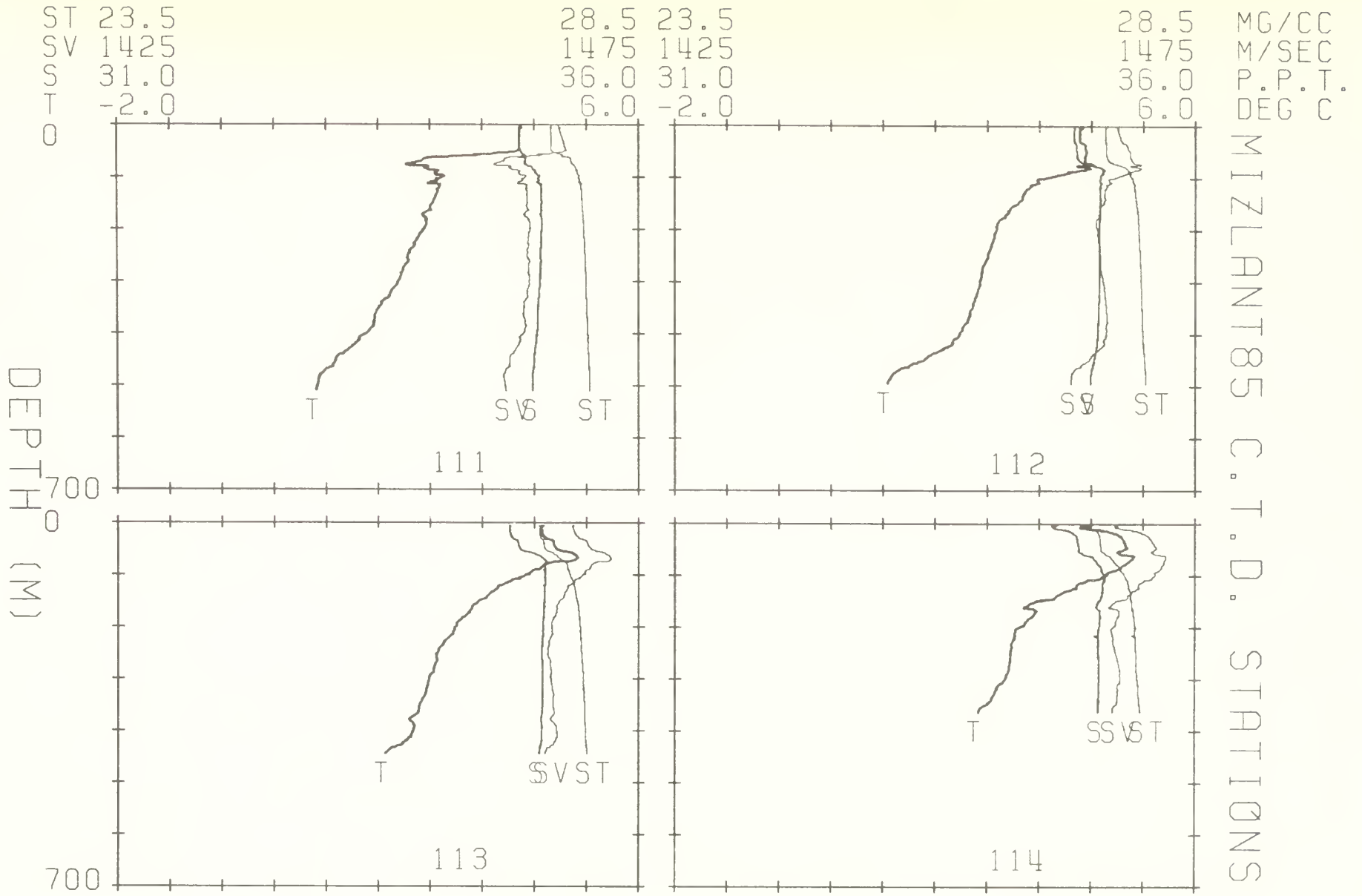

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
099
100
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
101
102
MIZLANT 85 CTD STATIONS

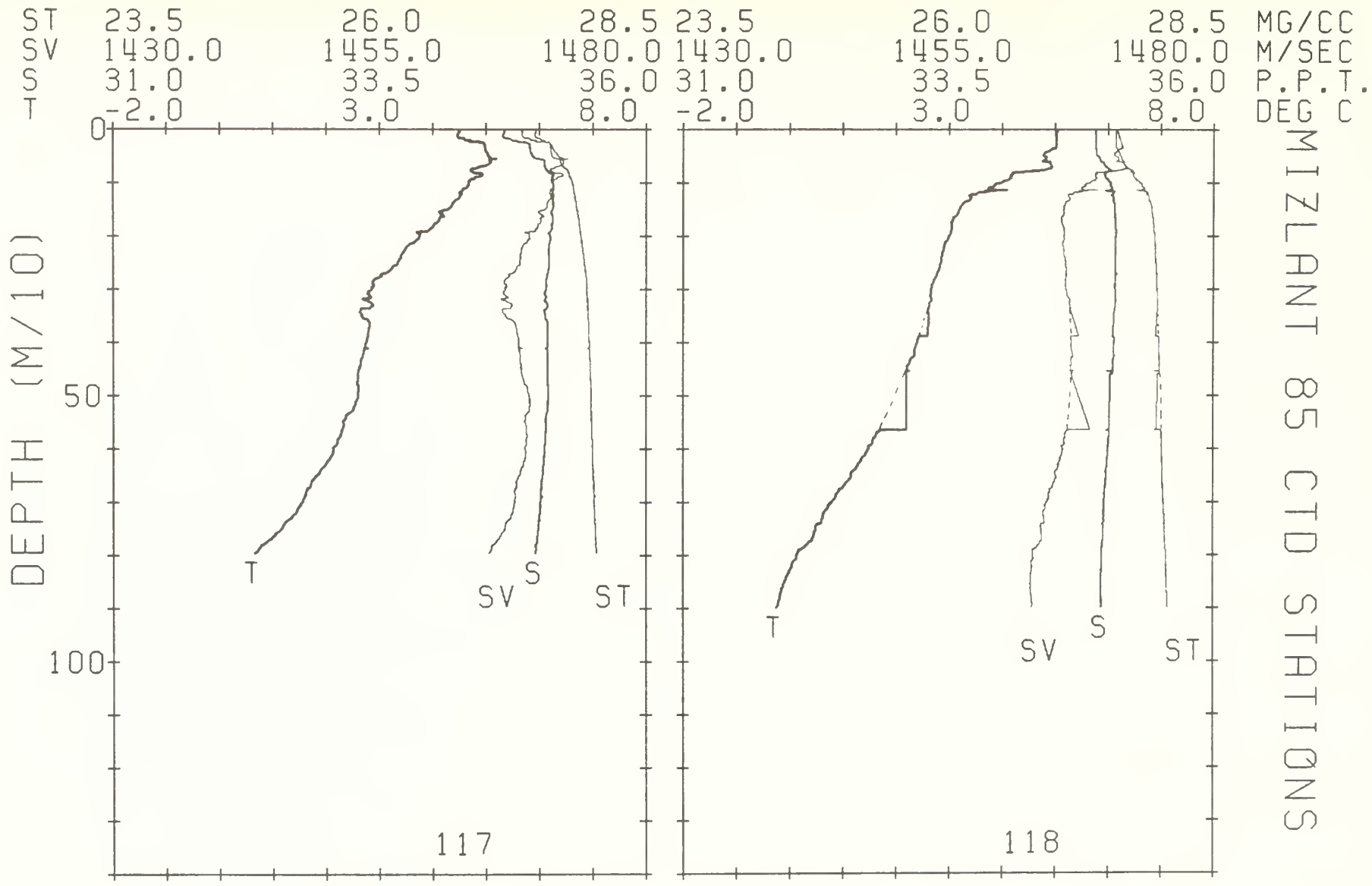

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
103
104
MIZLANT 85 CTD STATIONS

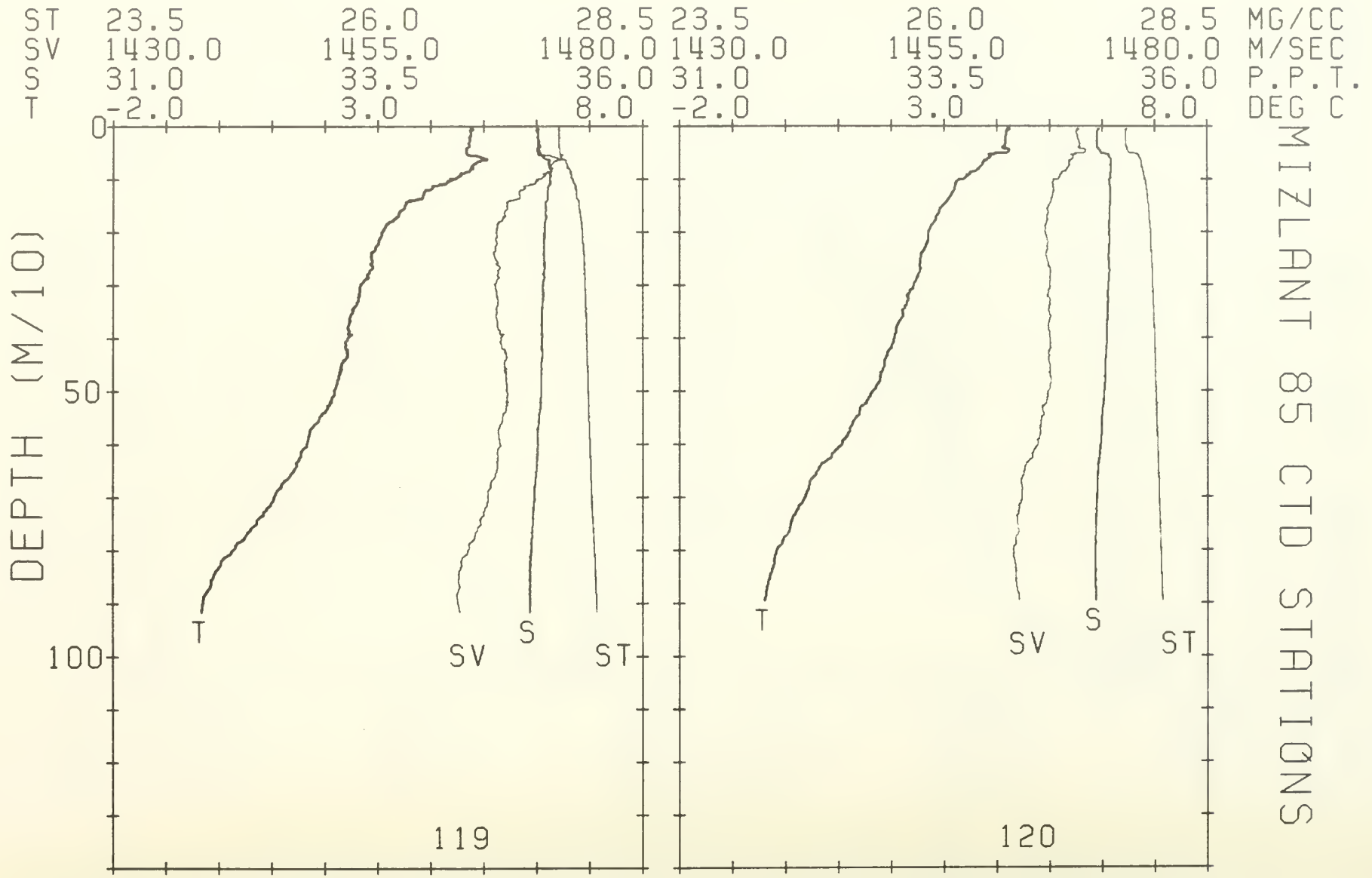

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
105
106
MIZLANT 85 CTD STATIONS

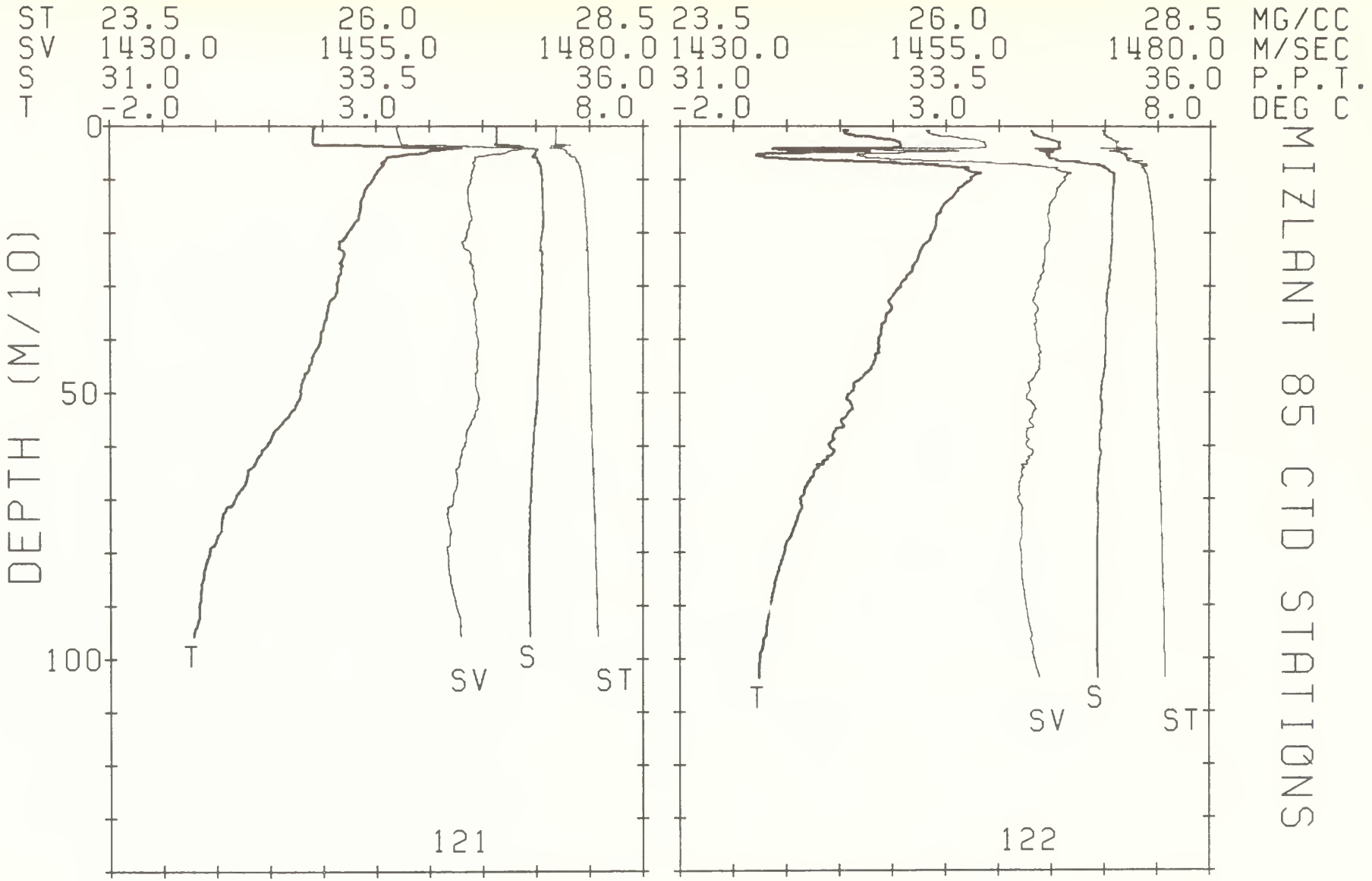

ST 23.5
SV 1425
S 31.0
T -2.0
0
28.5
1475
36.0
6.0
23.5
1425
31.0
-2.0
28.5
1475
36.0
6.0
MG/CC
M/SEC
P.P.T.
DEG C
MIZLANT85 C.T.D. STATIONS
DEPTH (M)
0
700
T
SV
S
ST
107
108
109
110

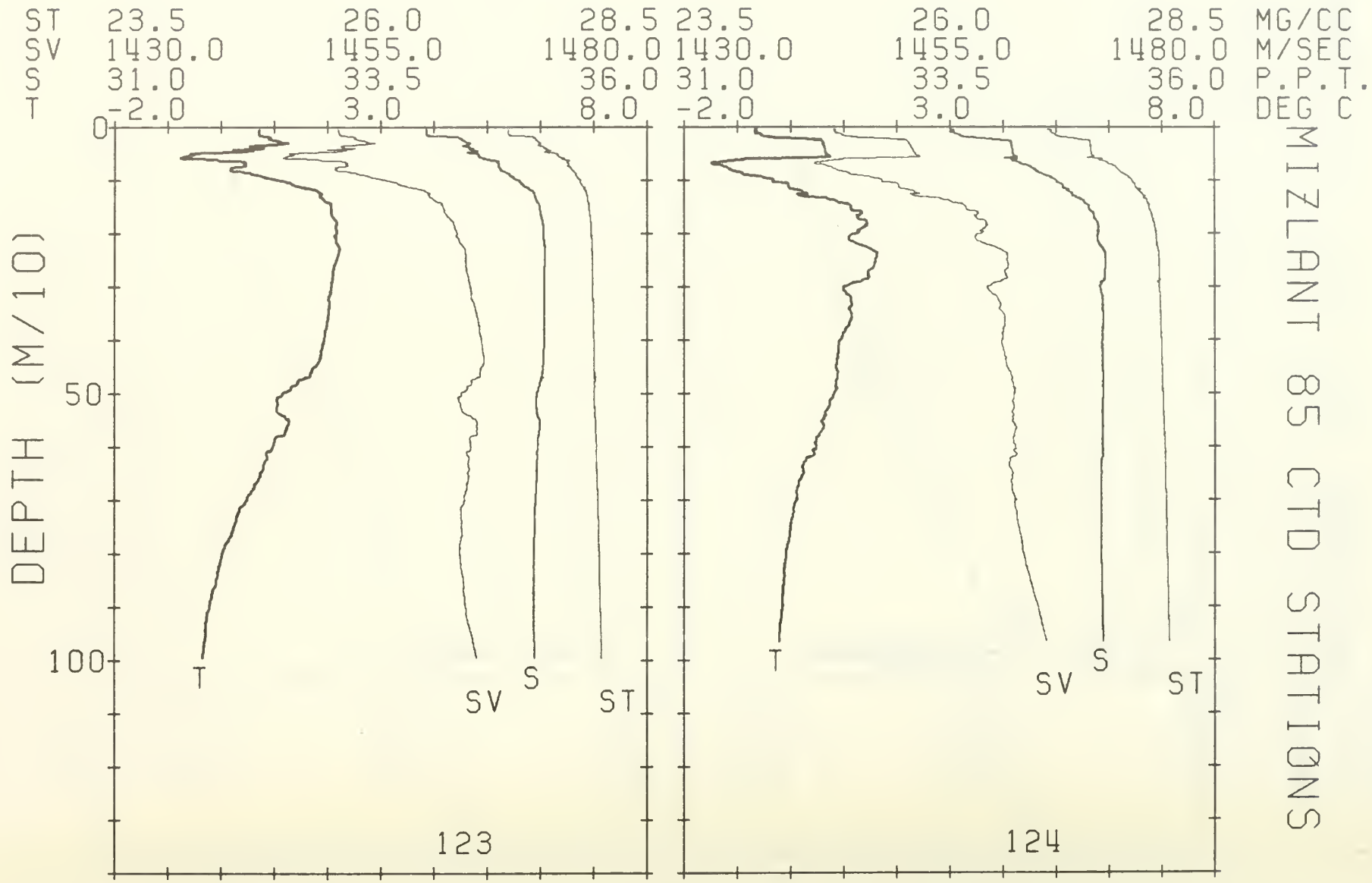

ST 23.5 28.5 23.5 28.5 MG/CC
SV 1425 1475 1425 1475 M/SEC
S 31.0 36.0 31.0 36.0 P.P.T.
T -2.0 6.0 -2.0 6.0 DEG C
MIZLANT85 C.T.D. STATIONS
DEPTH (M)
0
700
0
700
T
S
V
ST
111
112
113
114

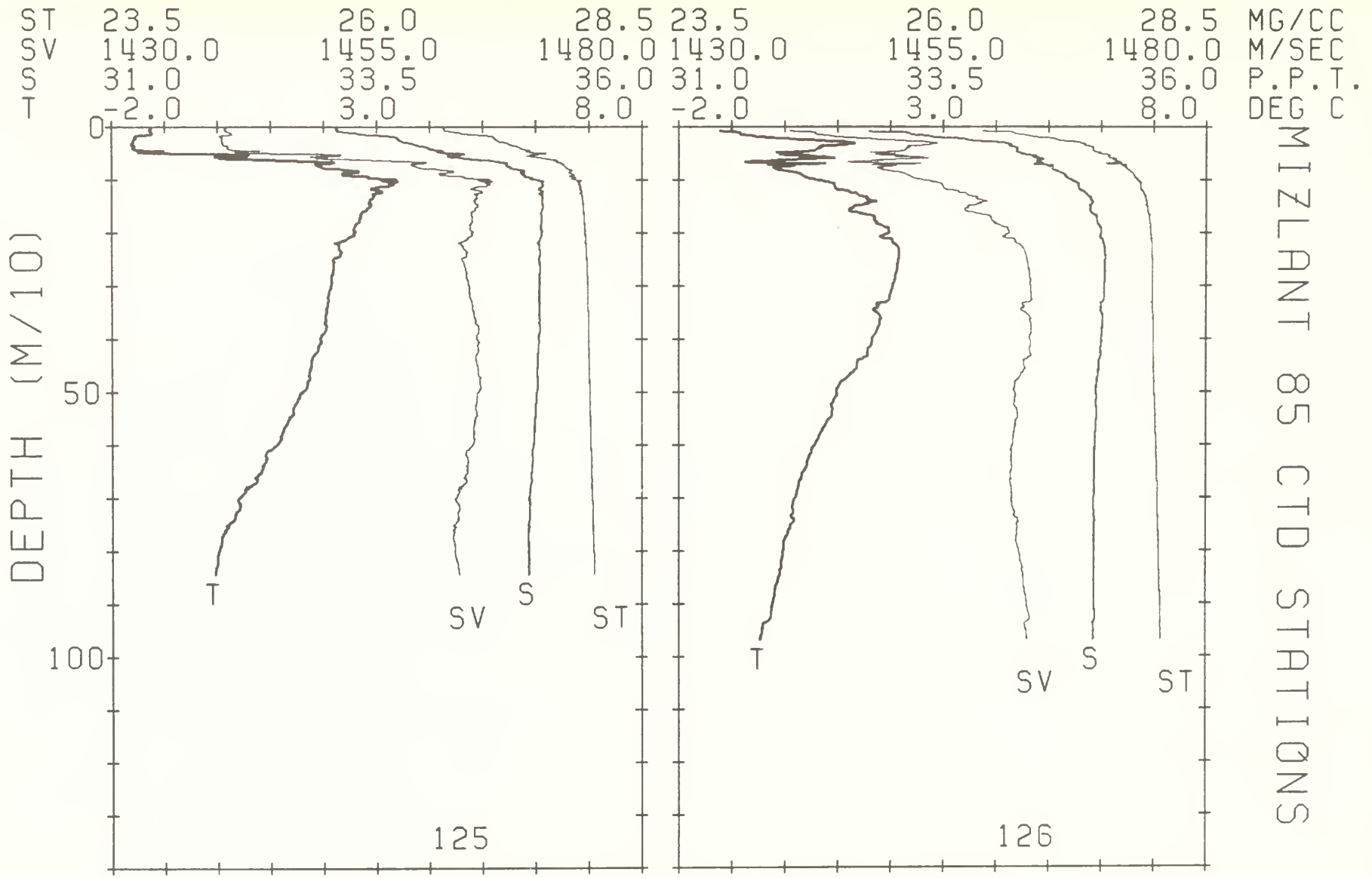
MIZLANT85 C.T.D. STATIONS
MG/CC
M/SEC
P.P.T.
DEG C
28.5
1475
36.0
6.0
ST 23.5
SV 1425
S 31.0
T -2.0
0
700
116
SS
T
DEPTH (M)

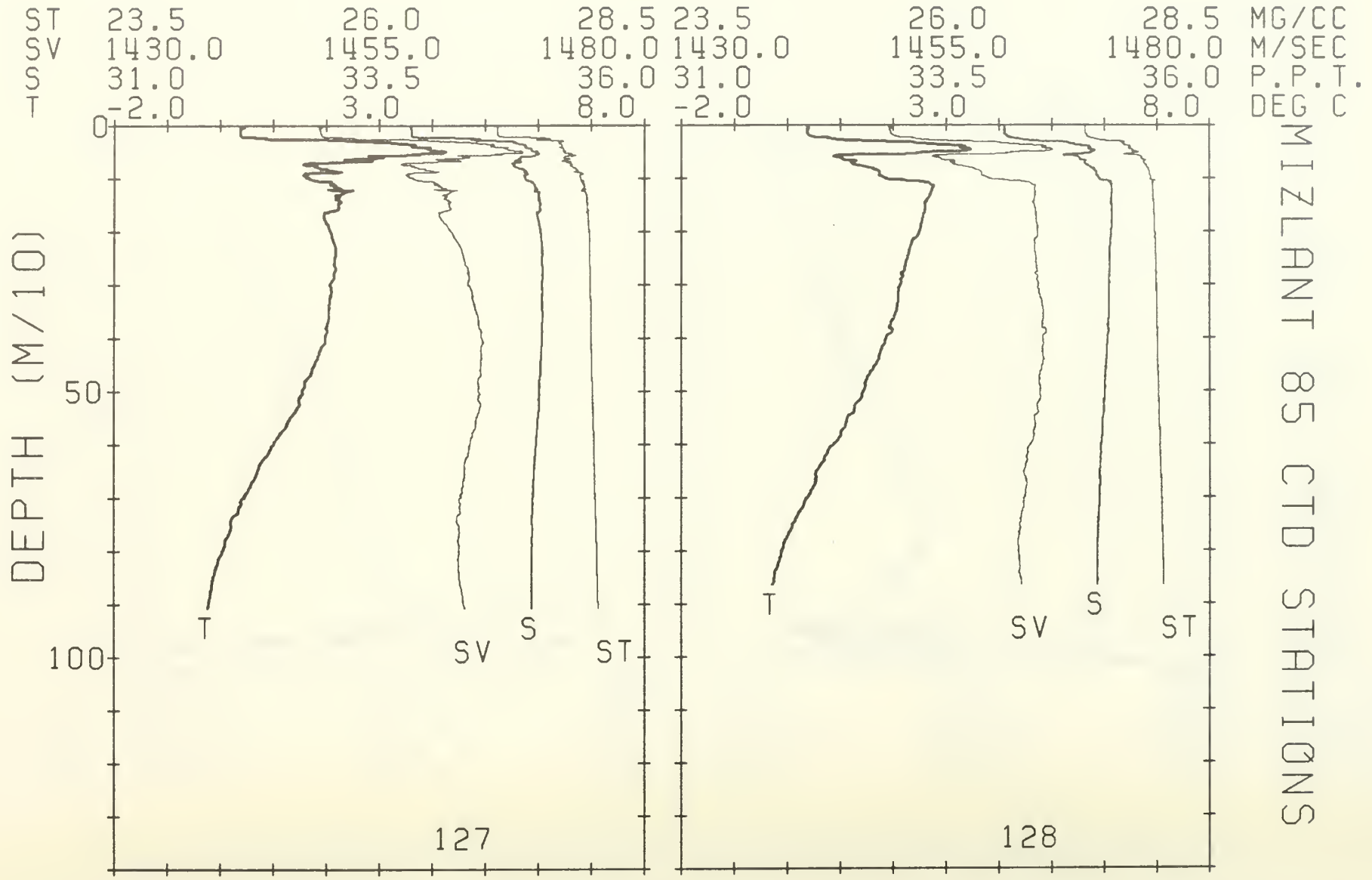

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
117
118
MIZLANT 85 CTD STATIONS

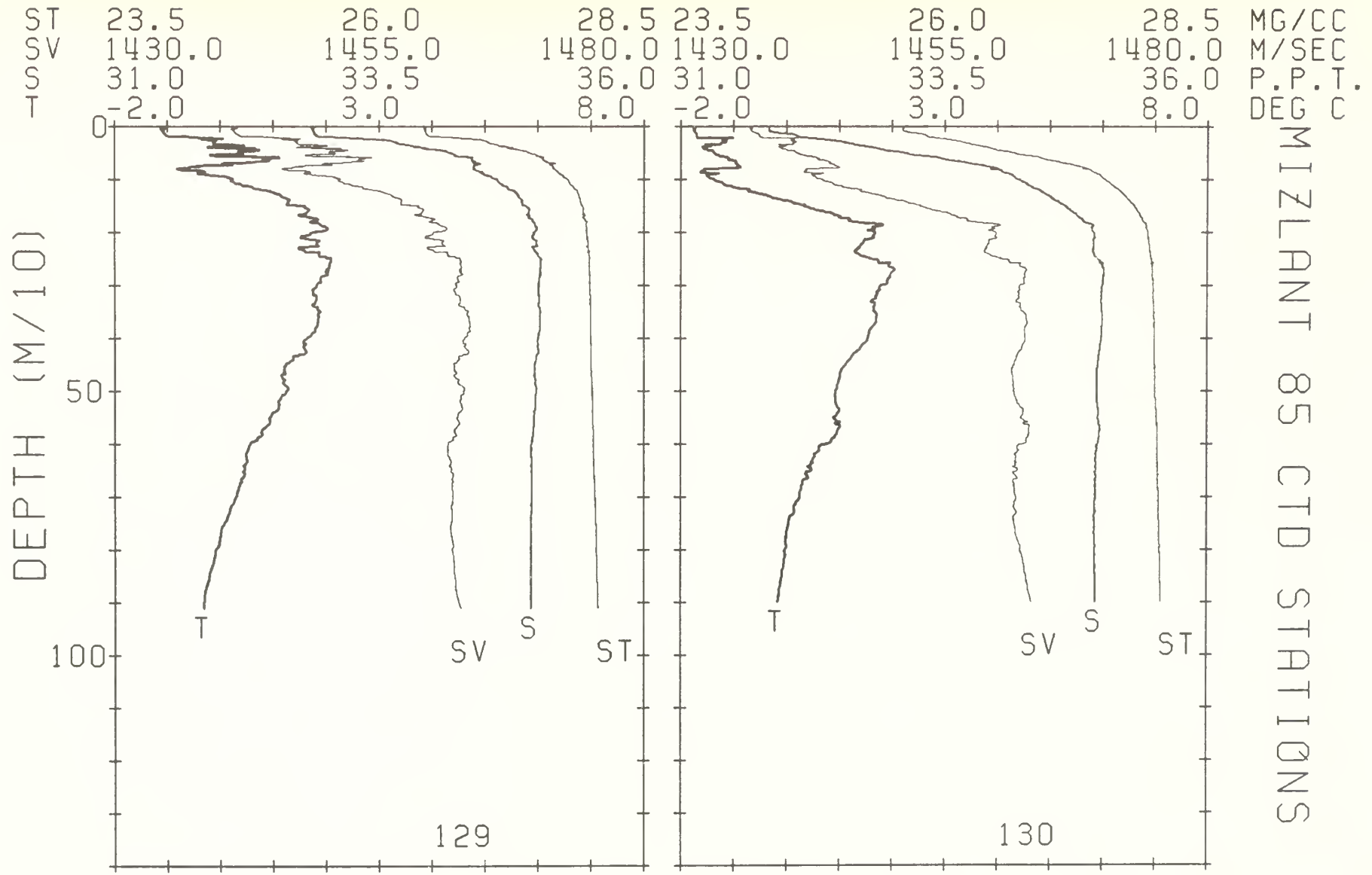

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
119
120
MIZLANT 85 CTD STATIONS

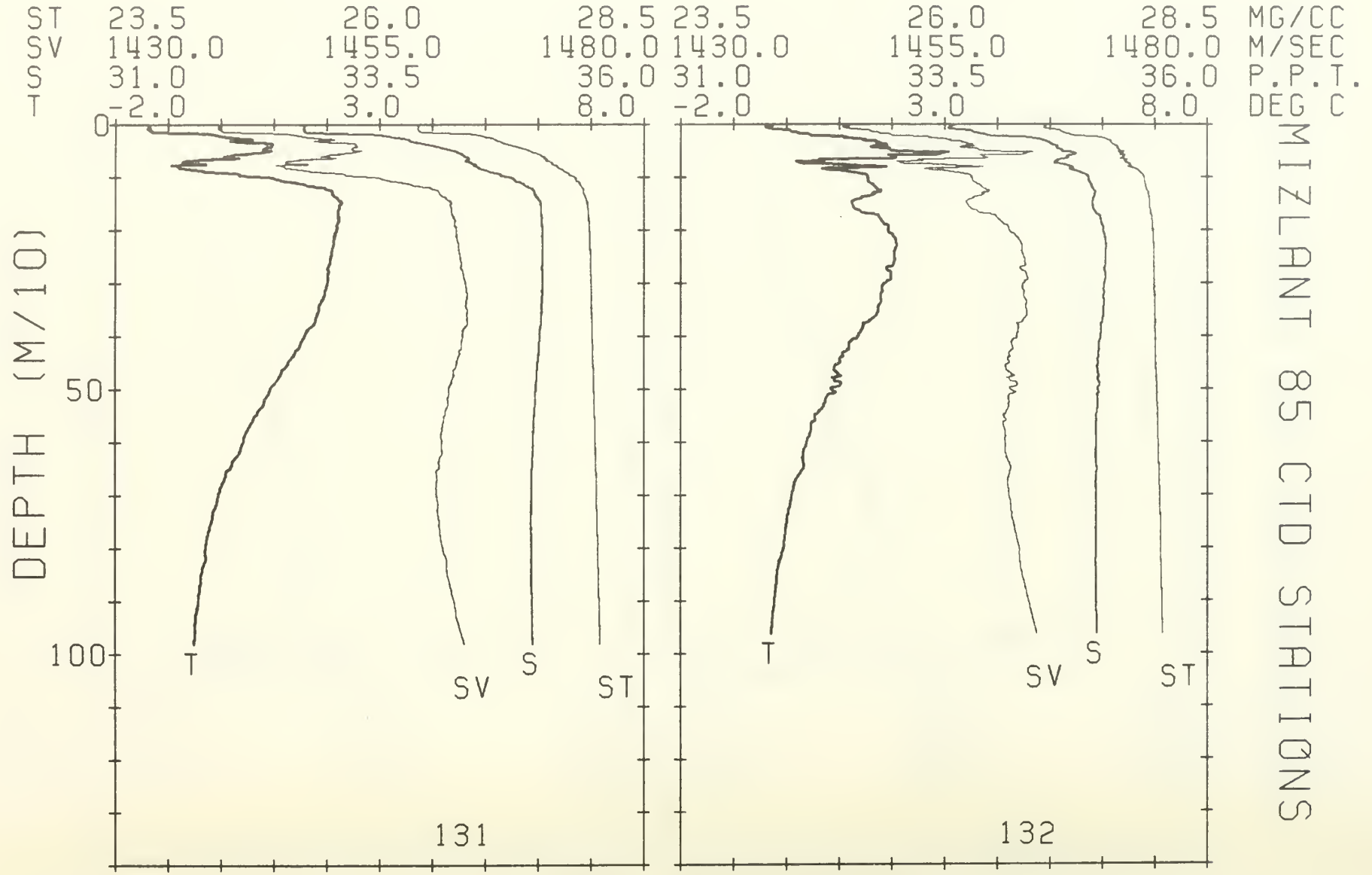

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
121
122
MIZLANT 85 CTD STATIONS

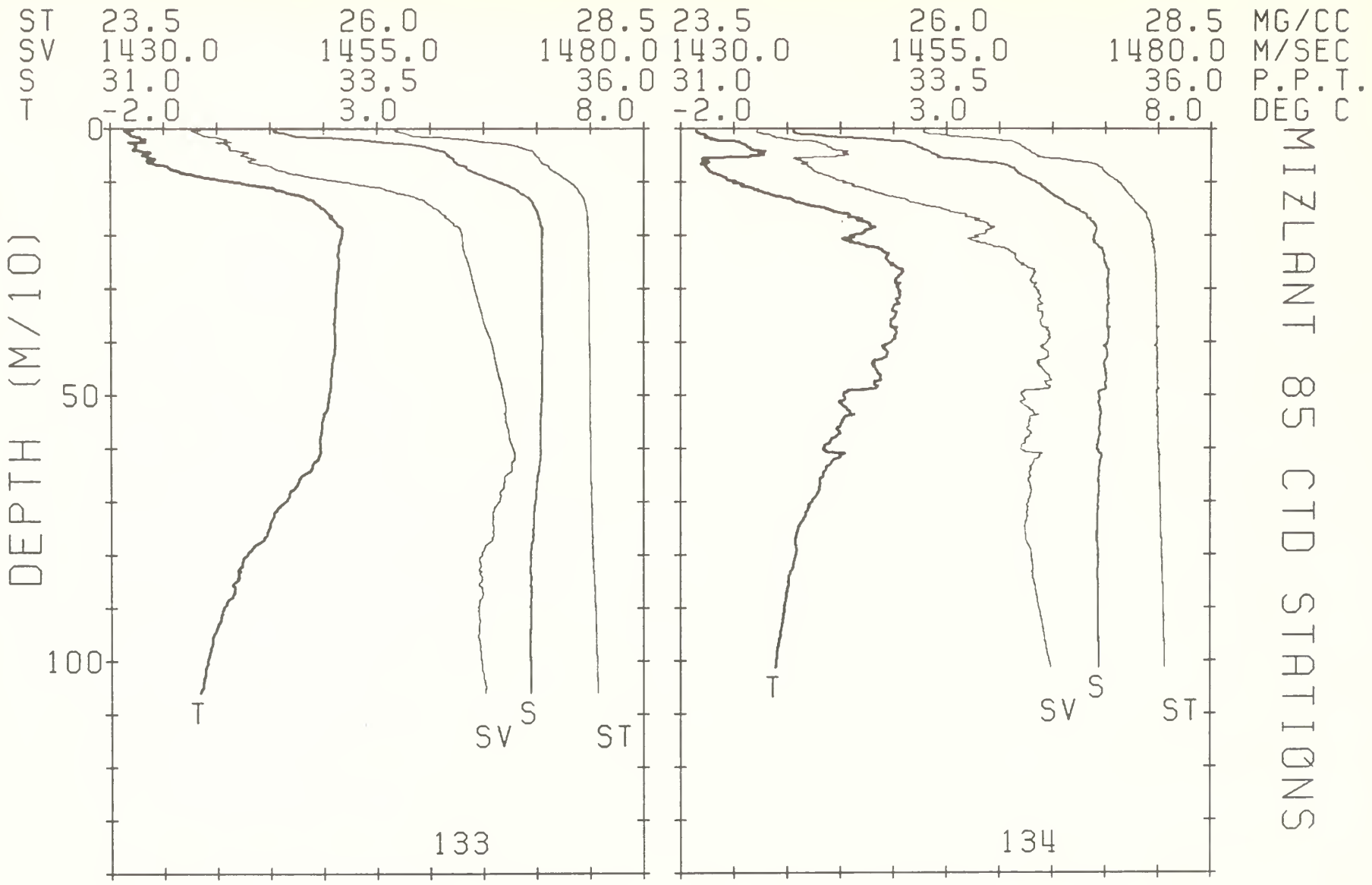

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
123
124
MIZLANT 85 CTD STATIONS

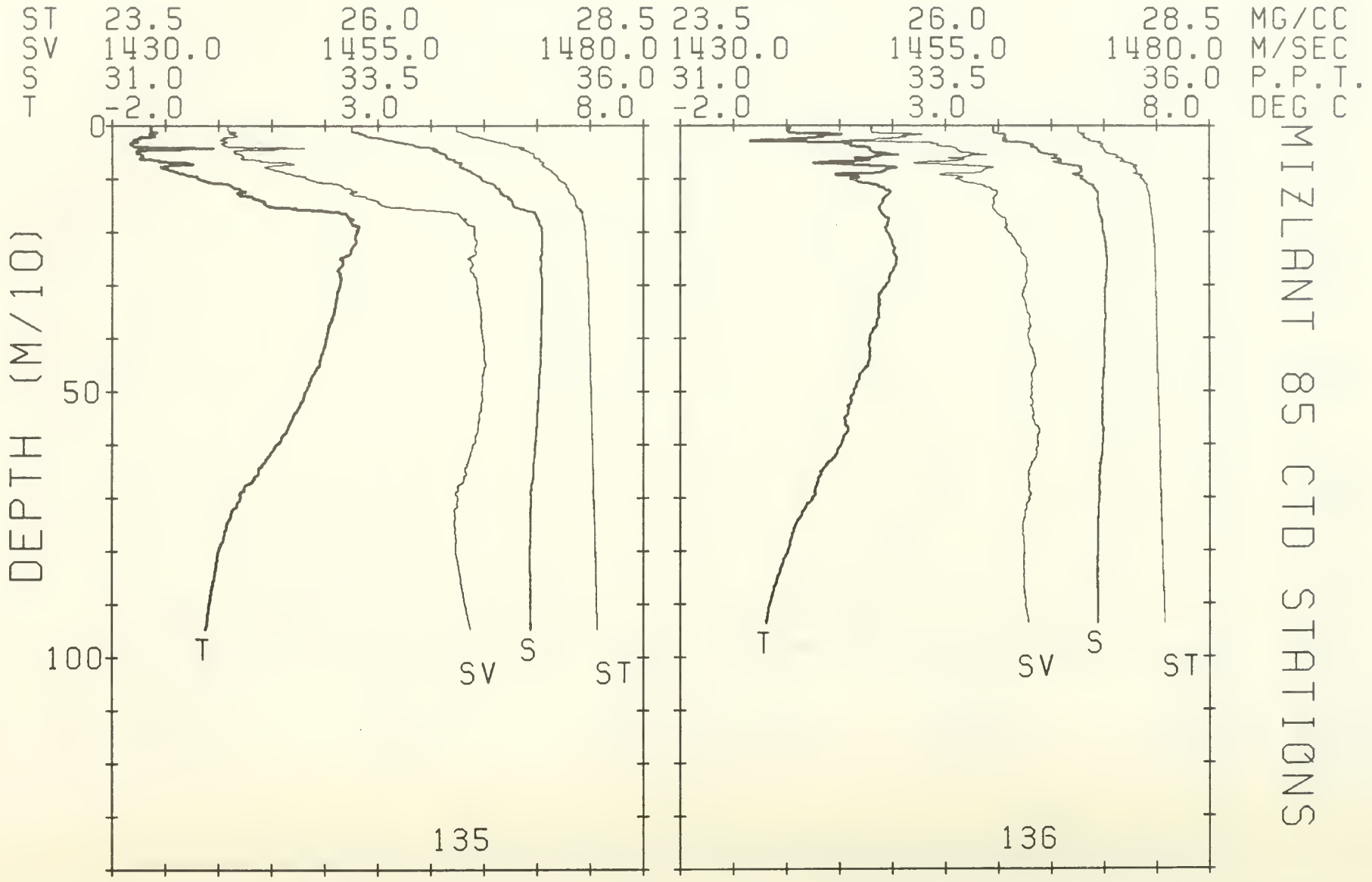

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
125
126
MIZLANT 85 CTD STATIONS

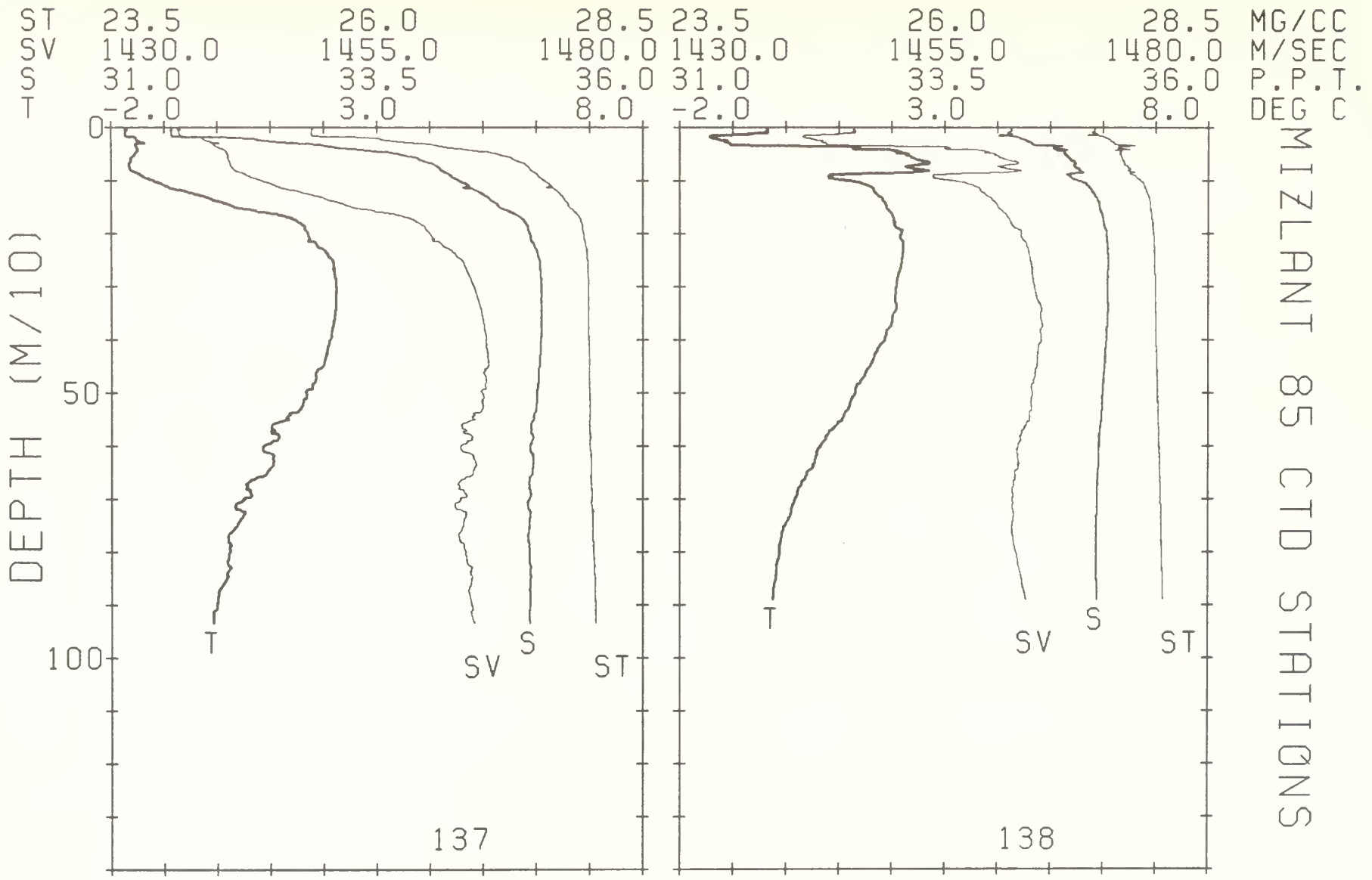

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
127
128
MIZLANT 85 CTD STATIONS

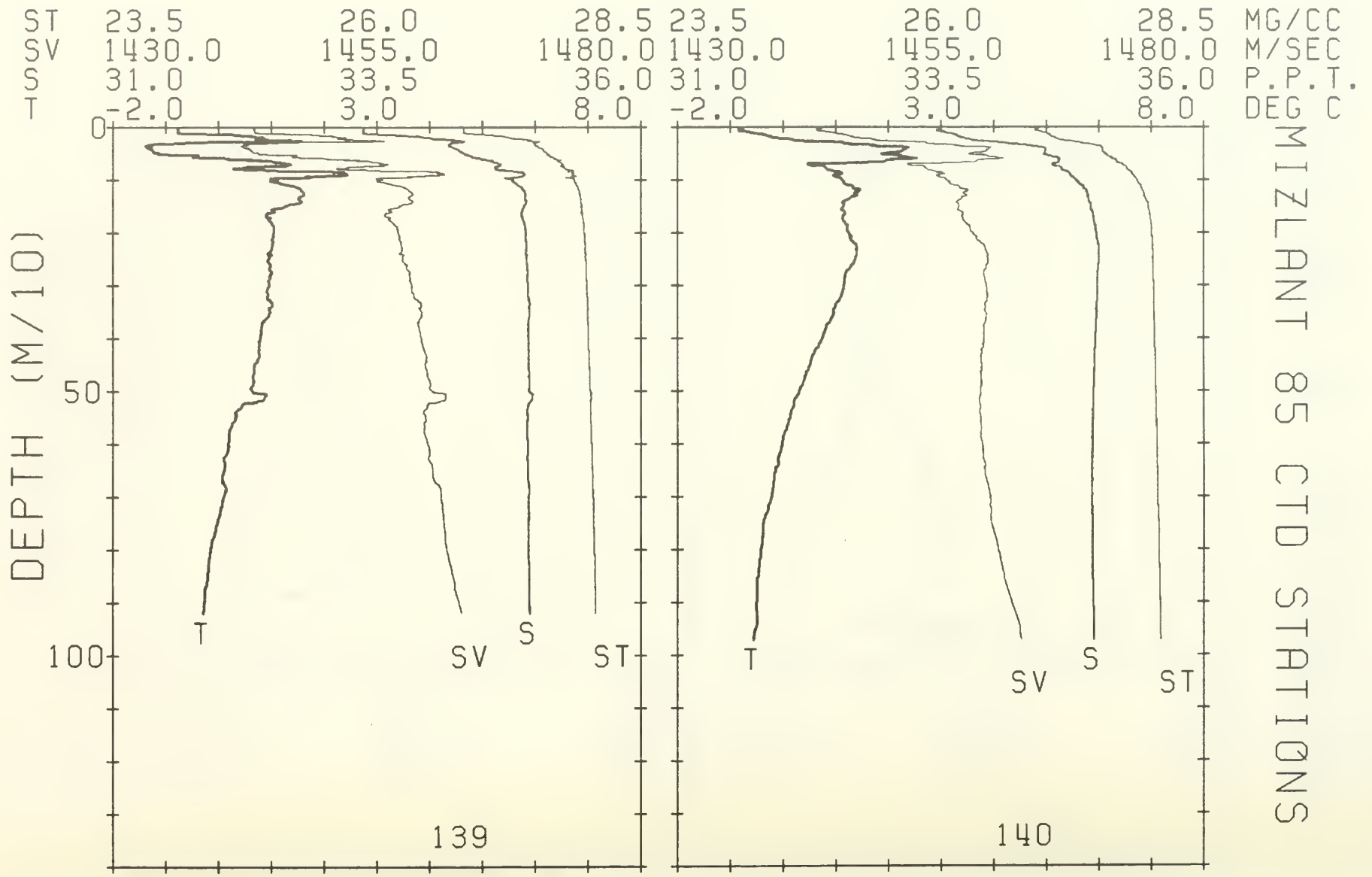

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
129
130
MIZLANT 85 CTD STATIONS

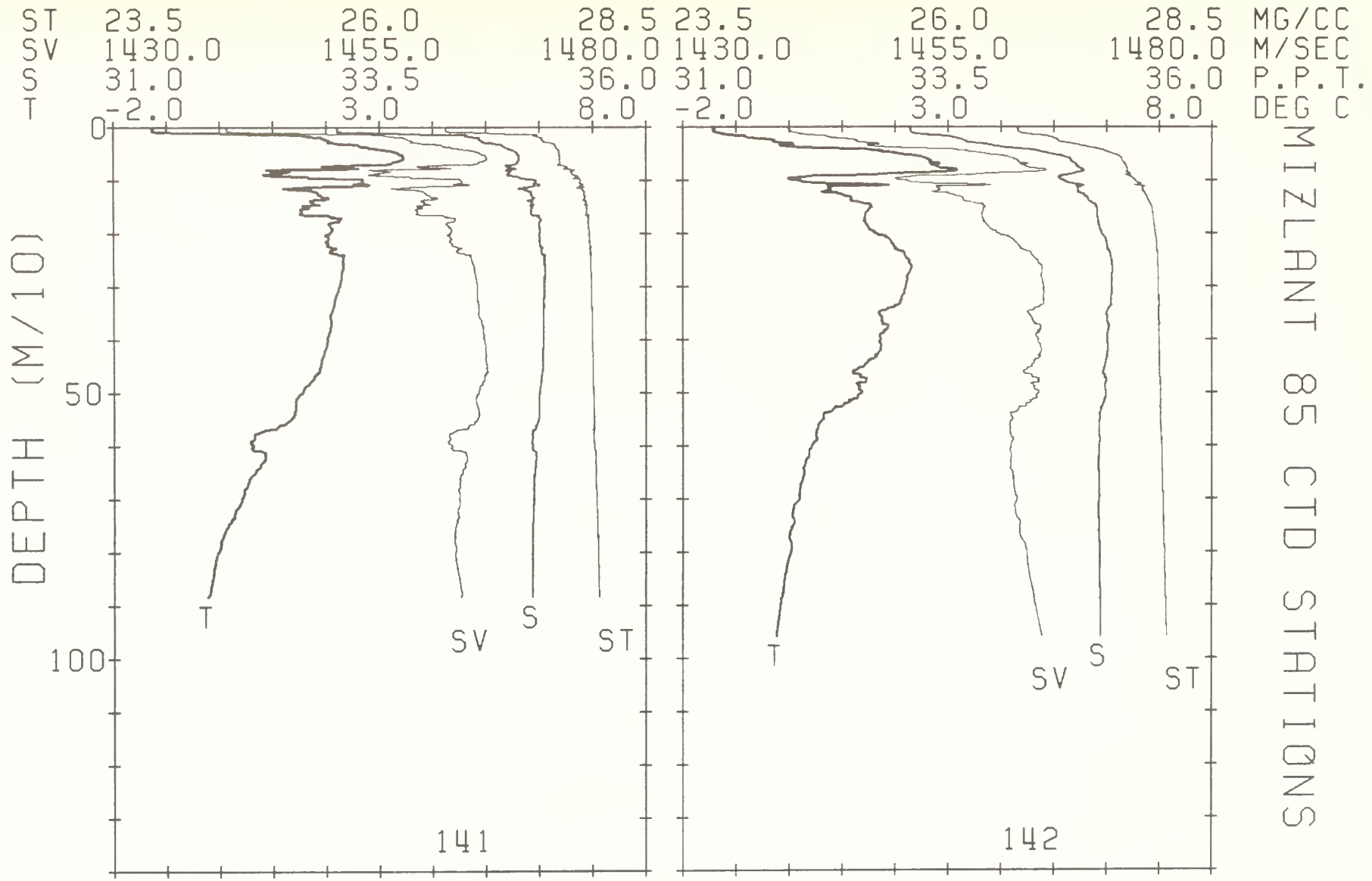

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
131
132
MIZLANT 85 CTD STATIONS

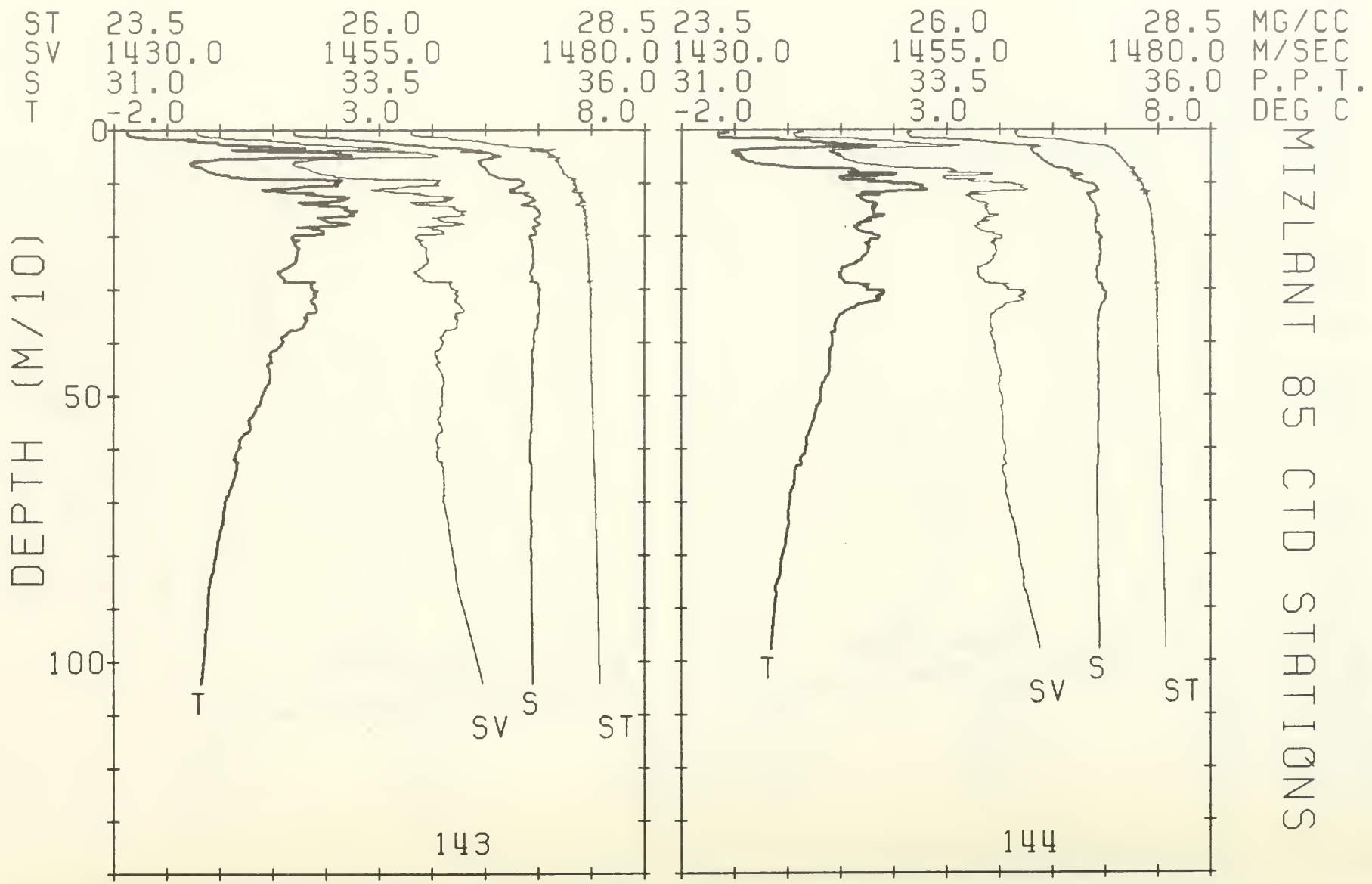

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
133
134
MIZLANT 85 CTD STATIONS

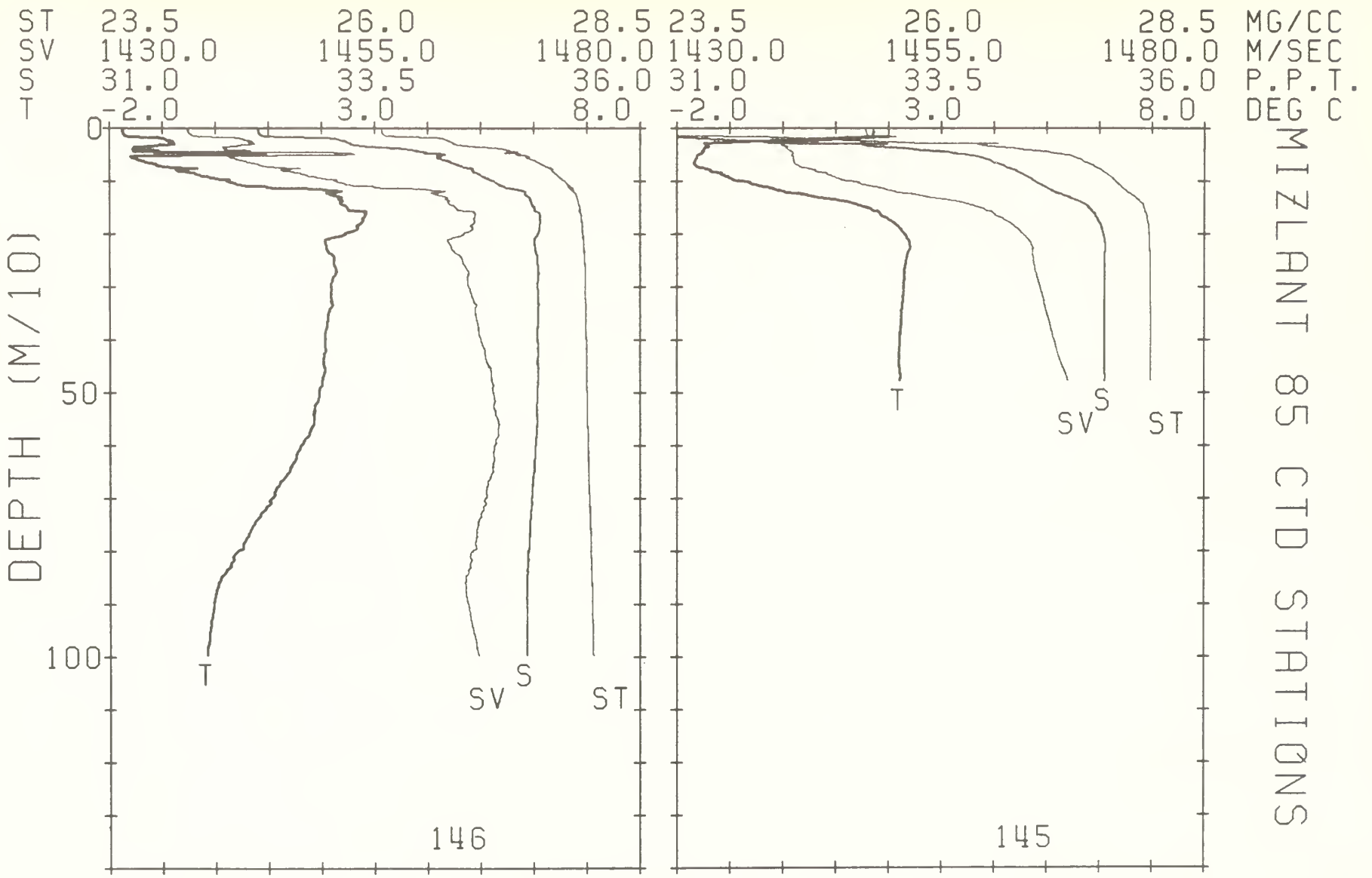

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
135
136
MIZLANT 85 CTD STATIONS

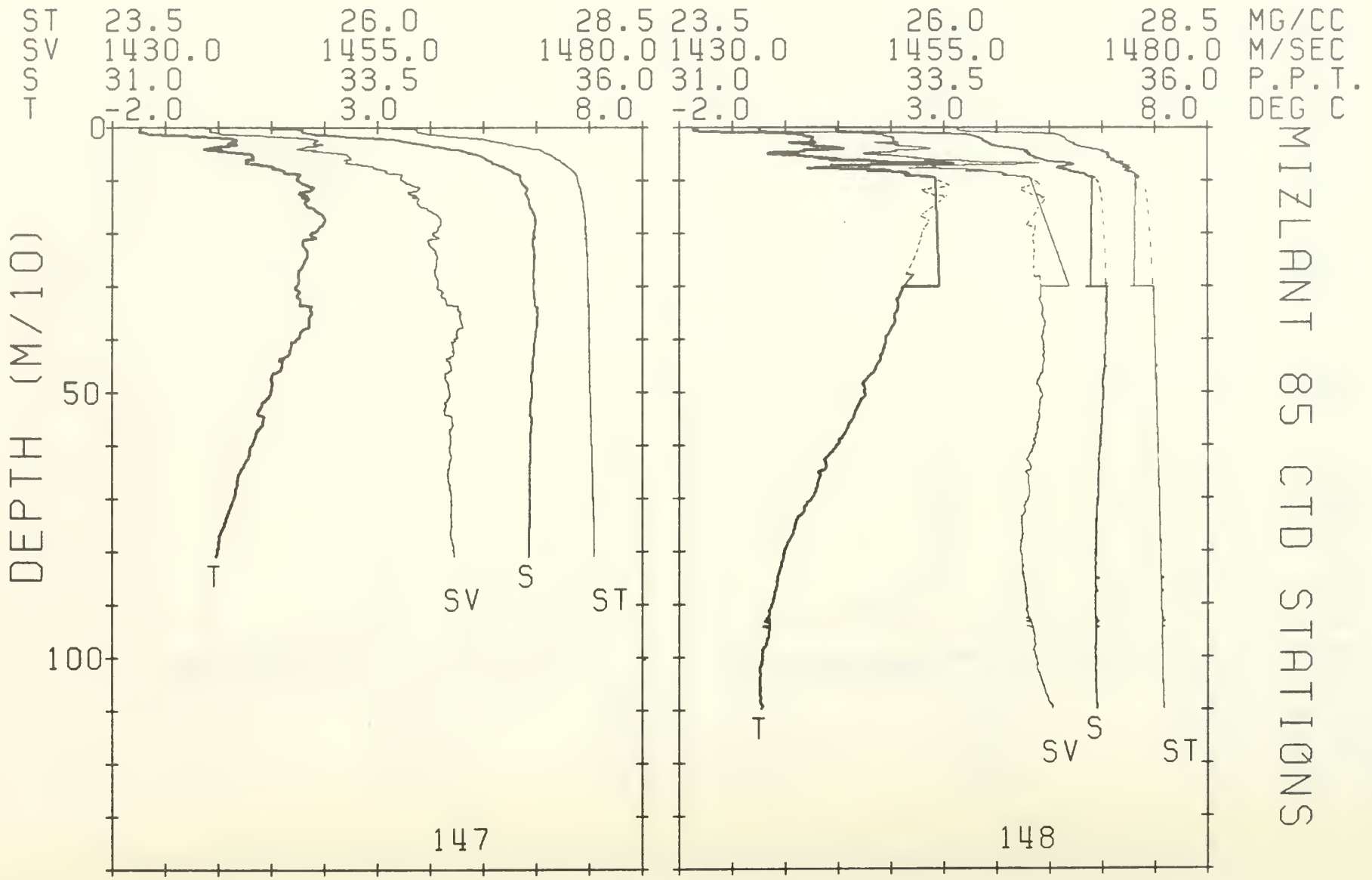

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
137
138
MIZLANT 85 CTD STATIONS

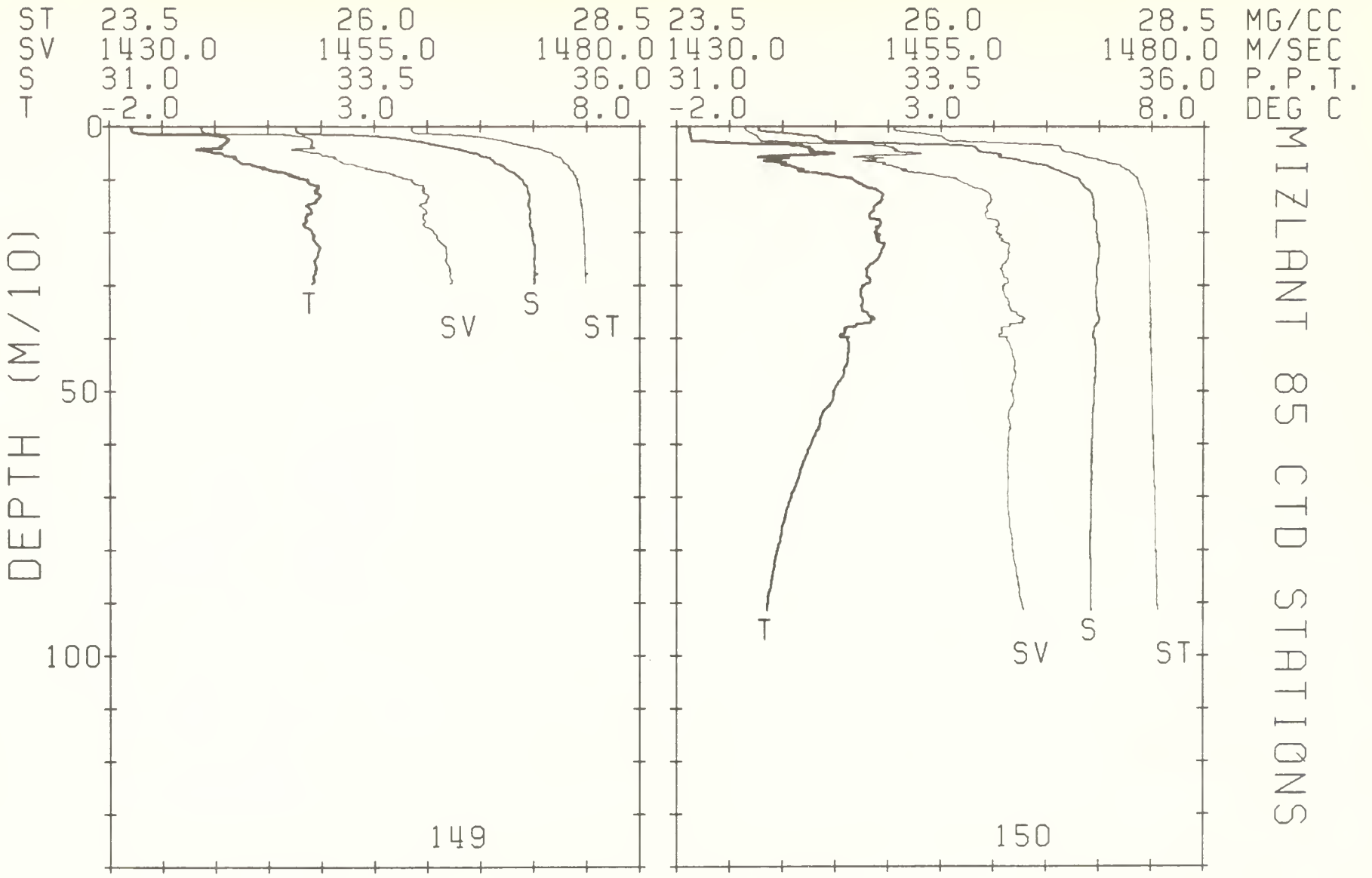

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
139
140
MIZLANT 85 CTD STATIONS

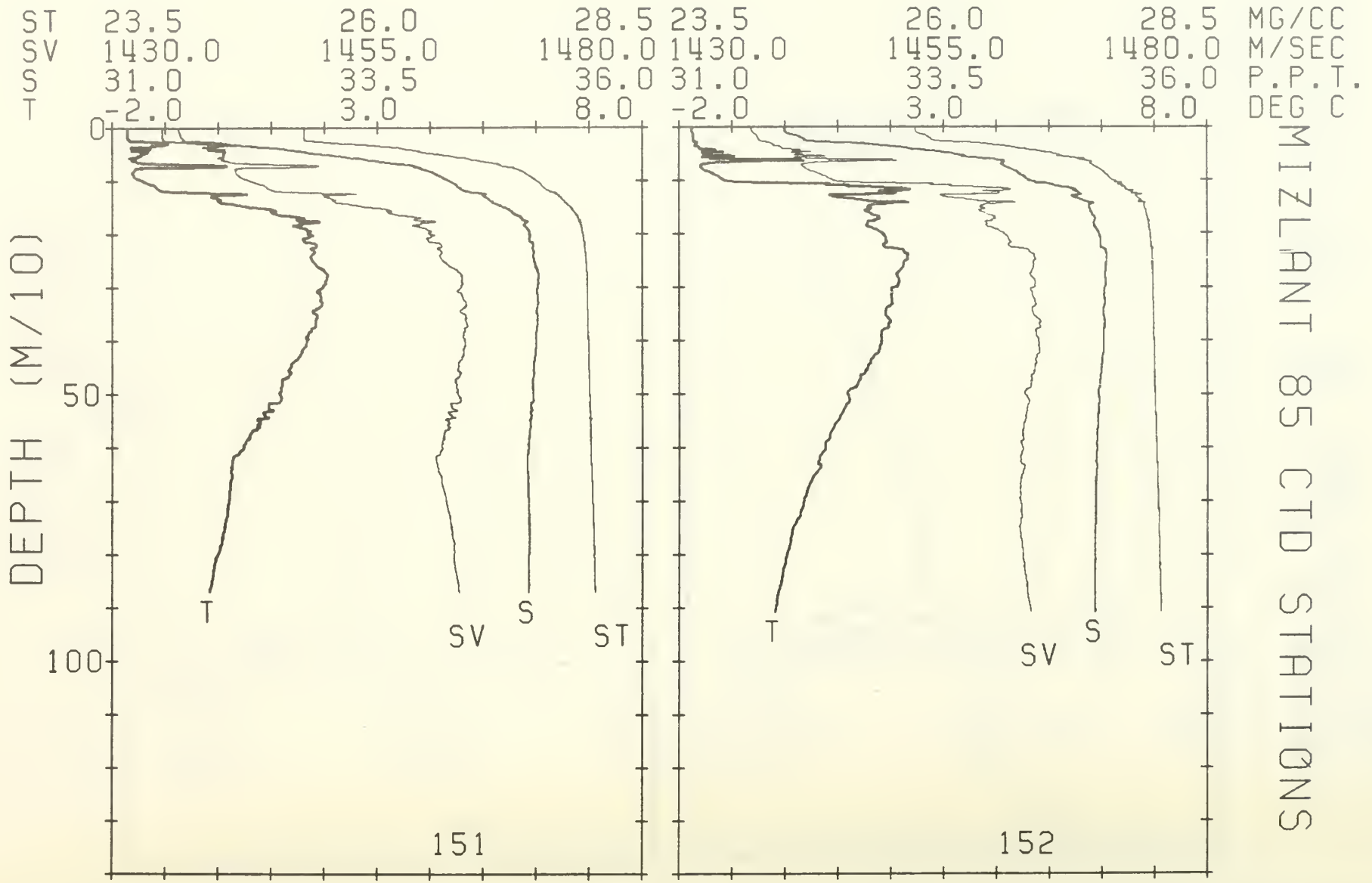

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
141
142
MIZLANT 85 CTD STATIONS

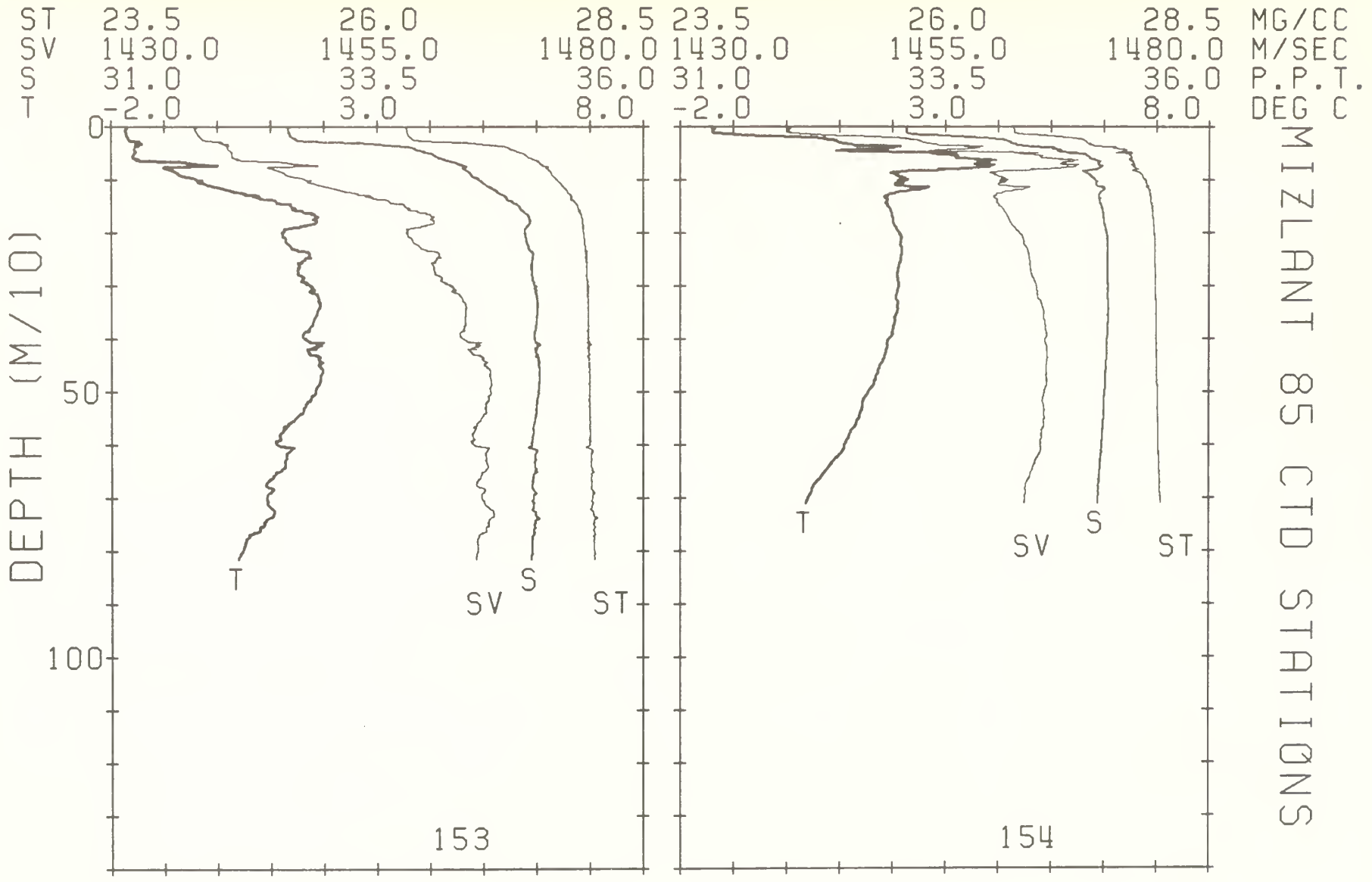

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
143
144
MIZLANT 85 CTD STATIONS

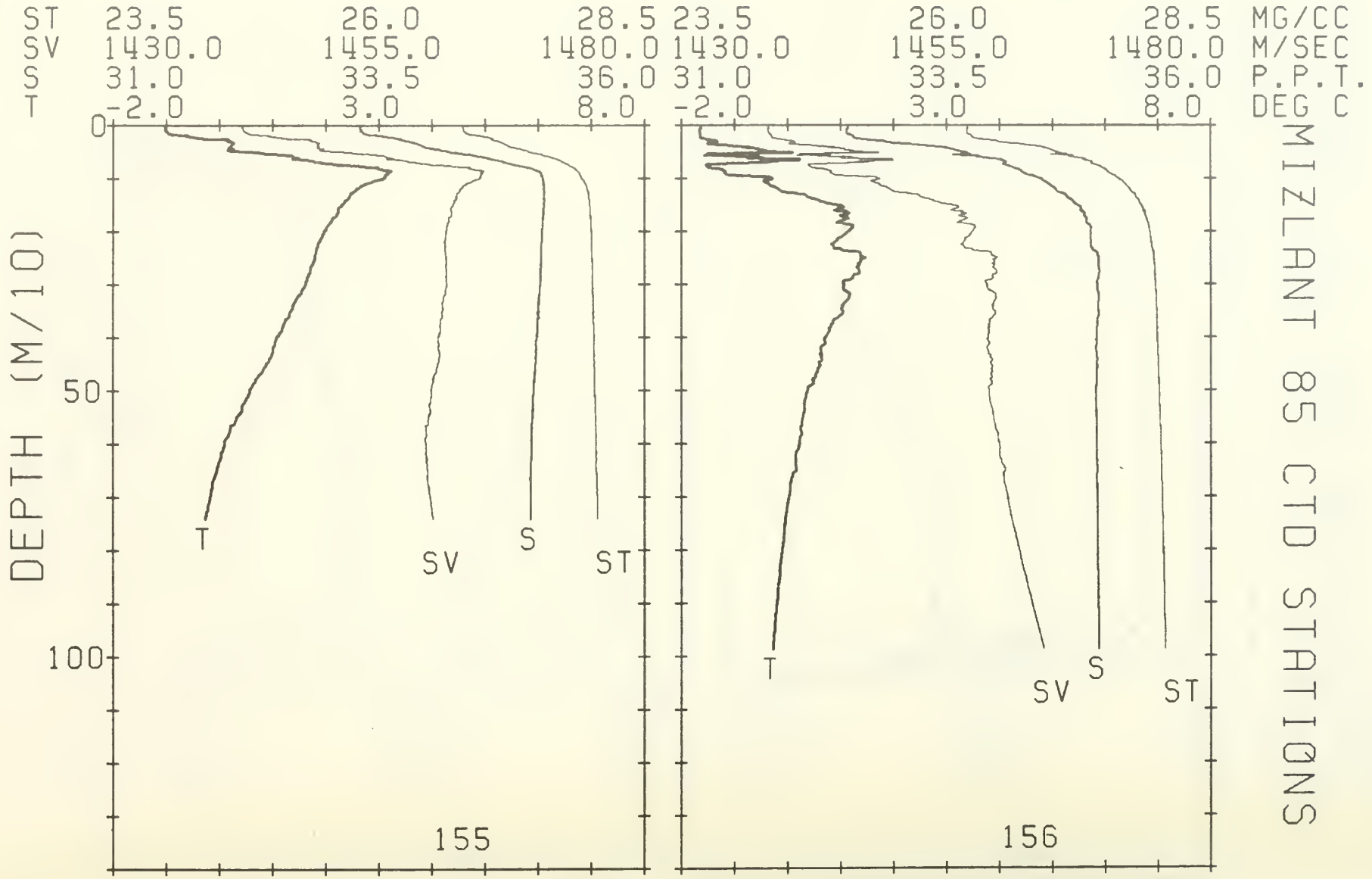

ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
146
145
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
147
148
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
149
150
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
151
152
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
153
154
MIZLANT 85 CTD STATIONS


ST 23.5 26.0 28.5 23.5 26.0 28.5 MG/CC
SV 1430.0 1455.0 1480.0 1430.0 1455.0 1480.0 M/SEC
S 31.0 33.5 36.0 31.0 33.5 36.0 P.P.T.
T -2.0 3.0 8.0 -2.0 3.0 8.0 DEG C
DEPTH (M/10)
0
50
100
T
SV
S
ST
155
156
MIZLANT 85 CTD STATIONS

INITIAL DISTRIBUTION LIST

		No. Copies
1.	Director Applied Physics Laboratory Attn: Mr. Robert E. Francois Mr. E.A. Pence Mr. G.R. Garrison Library University of Washington 1013 Northeast 40th Street Seattle, Washington 98105	 1 1 1 1
2.	Director Arctic Submarine Laboratory Code 19, Building 371 Naval Ocean Systems Center San Diego, California 92152	5
3.	Superintendent Naval Postgraduate School Attn: Library, Code 0142 Dr. R.H. Bourke, Code 68Bf Dr. R.G. Paquette, Code 68Pa Monterey, California 93943	 2 5 5
4	Polar Research Laboratory, Inc. 6309 Carpinteria Ave. Carpinteria, California 93103	1
5.	Chief of Naval Operations Department of the Navy Attn: NOP-02 NOP-22 NOP-964D2 NOP-095 NOP-098 Washington, District of Columbia 20350	 1 1 1 1 1
6.	Commander Submarine Squadron THREE Fleet Station Post Office San Diego, California 92132	1
7.	Commander Submarine Group FIVE Fleet Station Post Office San Diego, California 92132	1

8. Dr. John L. Newton — 1
10211 Rookwood Drive
San Diego, California 92131

9. Director — 1
Marine Physical Laboratory
Scripps Institution of Oceanography
San Diego, California 92132

10. Commanding Officer — 1
Naval Intelligence Support Center
4301 Suitland Road
Washington, District of Columbia 20390

11. Commander — 1
Space and Naval Warfare Systems Command
Department of the Navy
Washington, District of Columbia 20360

12. Director — 1
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

13. Commanding Officer — 1
Naval Coastal Systems Laboratory
Panama City, Florida 32401

14. Commanding Officer — 1
Naval Submarine School
Naval Submarine Base, New London
Groton, Connecticut 06349-5700

15. Assistant Secretary of the Navy — 1
(Research and Development)
Department of the Navy
Washington, District of Columbia 20350

16. Director of Defense Research and Engineering — 1
Office of Assistant Director (Ocean Control)
The Pentagon
Washington, District of Columbia 20301

17. Commander, Naval Sea Systems Command — 1
Department of the Navy
Washington, District of Columbia 20362

18. Chief of Naval Research
Department of the Navy
Attn: Code 102-OS — 1
Code 220 — 1
Code 1125 Arctic — 1
800 N. Quincy Street
Arlington, Virginia 22217

19. Project Manager — 1
Anti-Submarine Warfare Systems Project
Office (PM4)
Department of the Navy
Washington, District of Columbia 20360

20. Commanding Officer — 1
Naval Underwater Systems Center
Newport, Rhode Island 02840

21. Commander — 1
Naval Air Systems Command
Headquarters
Department of the Navy
Washington, District of Columbia 20361

22. Commander
Naval Oceanographic Office
Attn: Library Code 3330 — 1
Washington, District of Columbia 20373

23. Director — 1
Advanced Research Project Agency
1400 Wilson Boulevard
Arlington, Virginia 22209

24. Commander SECOND Fleet — 1
Fleet Post Office
New York, New York 09501

25. Commander THIRD Fleet — 1
Fleet Post Office
San Francisco, California 96601

26. Commander
Naval Surface Weapons Center
White Oak
Attn: Mr. M.M. Kleinerman — 1
Library — 1
Silver Springs, Maryland 20910

27. Officer-in-Charge — 1
New London Laboratory
Naval Underwater Systems Center
New London, Connecticut 06320

28. Commander
Submarine Development Squadron TWELVE — 1
Naval Submarine Base
New London
Groton, Connecticut 06349

29. Commander
Naval Weapons Center
Attn: Library 1
China Lake, California 93555

30. Commander
Naval Electronics Laboratory Center
Attn: Library 1
271 Catalina Boulevard
San Diego, California 92152

31. Director 1
Naval Research Laboratory
Attn: Technical Information Division
Washington, District of Columbia 20375

32. Director 1
Ordnance Research Laboratory
Pennsylvania State University
State College, Pennsylvania 16801

33. Commander Submarine Force 1
U.S. Atlantic Fleet
Norfolk, Virginia 23511

34. Commander Submarine Force
U.S. Pacific Fleet 1
Attn: N-21
Pearl Harbor, HI 96860-6550

35. Commander 1
Naval Air Development Center
Warminster, Pennsylvania 18974

36. Commander 1
Naval Ship Research and Development Center
Bethesda, Maryland 20084

37. Commandant 1
U.S. Coast Guard Headquarters
400 Seventh Street, S.W.
Washington, DC 20590

38. Commander 1
Pacific Area, U.S. Coast Guard
630 Sansome Street
San Francisco, California 94126

39. Commander 1
Atlantic Area, U.S. Coast Guard
159E, Navy Yard Annex
Washington, District of Columbia 20590

40. Commanding Officer — 1
U.S. Coast Guard Oceanographic Unit
Building 159E, Navy Yard Annex
Washington, District of Columbia 20590

41. Scientific Liaison Office — 1
Office of Naval Research
Scripps Institute of Oceanography
La Jolla, California 92037

42. Scripps Institution of Oceanography — 1
Attn: Library
P.O. Box 2367
La Jolla, California 92037

43. School of Oceanography
University of Washington
Attn: Dr. L.K. Coachman — 1
Dr. S. Martin — 1
Library — 1
Seattle, Washington 98195

44. School of Oceanography — 1
Oregon State University
Attn: Library
Corvallis, Oregon 97331

45. CRREL
U.S. Army Corps of Engineers
Attn: Library — 1
Hanover, New Hampshire 03755-1290

46. Commanding Officer — 1
Fleet Numerical Oceanography Center
Monterey, California 93943

47. Commanding Officer — 1
Naval Environmental Prediction Research Facility
Monterey, California 93943

48. Defense Technical Information Center — 2
Cameron Station
Alexandria, Virginia 22314

49. Commander — 1
Naval Oceanography Command
NSTL Station
Bay St. Louis, Mississippi 39529

50. Commanding Officer
Naval Ocean Research and Development Activity
Attn: Technical Director — 1
NSTL Station
Bay St. Louis, Mississippi 39529

51. Commanding Officer — 1
Naval Polar Oceanography Center, Suitland
Washington, District of Columbia 20373

52. Director — 1
Naval Oceanography Division
Naval Observatory
34th and Massachussetts Ave. NW
Washington, District of Columbia 20390

53. Commanding Officer
Naval Oceanographic Command — 1
NSTL Station
Bay St. Louis, Mississippi 39522

54. Scott Polar Research Institute
University of Cambridge
Attn: Library — 1
Sea Ice Group — 1
Cambridge, England
CB2 1ER

55. Chairman — 1
Department of Oceanography
U.S. Naval Academy
Annapolis, Maryland 21402

56. Dr. James Morison — 1
Polar Science Center
4057 Roosevelt Way, NE
Seattle, Washington 98105

57. Dr. Kenneth Hunkins — 1
Lamont-Doherty Geological Observatory
Palisades, New York 10964

58. Dr. David Paskowsky, Chief — 1
Oceanography Branch
U.S. Department of the Coast Guard
Research and Development Center
Avery Point, Connecticut 06340

59. Science Applications, Inc.
Attn: Dr. Robin Muench — 1
13400B Northrup Way
Suite 36
Bellevue, Washington 98005

60. Institute of Polar Studies
Attn: Library — 1
103 Mendenhall
125 South Oval Mall
Columbus, Ohio 43210

61. Institute of Marine Science
University of Alaska
Attn: Library
Fairbanks, Alaska 99701 — 1

62. Department of Oceanography
University of British Columbia
Attn: Library
Vancouver, B.C. Canada
V6T 1W5 — 1

63. Institute of Marine Science
University of Alaska
Attn: Dr. H.J. Niebauer
Fairbanks, Alaska 99701 — 1

64. Bedford Institute of Oceanography
Attn: Library
P.O. Box 1006
Dartmouth, Nova Scotia
Canada
B2Y 4A2 — 1

65. Carol Pease
Pacific Marine Environmental Lab/NOAA
7600 Sand Point Way N.E.
Seattle, Washington 98115 — 1

66. Department of Oceanography
Dalhousie University
Halifax, Nova Scotia
Canada
B3H 4J1 — 1

67. Dr. Richard Armstrong
MIZEX Data Manager
National Snow and Ice Data Center
Cooperative Institute for Research
in Environmental Sciences
Boulder, Colorado 80309 — 2

68. Dr. Eddy Carmack
Institute of Ocean Sciences
P.O. Box 6000
Sidney, B.C.
Canada
V8L 4B2 — 1

70. Dr. Knut Aagaard
NOAA/PMEL
NOAA Bldg. #3
7600 Sand Point Way, N.E.
Seattle, WA 98115 — 1

71. Department of Ocean Engineering 1
Attn: Library
Mass. Institute of Technology
Cambridge, MA 02139

72. Dr. Theodore D. Foster 1
Center for Coastal Marine Studies
University of California
Santa Cruz, CA 95064

73. Research Administration 1
Code 012
Naval Postgraduate School
Monterey, CA 93943-5000

DUDLEY KNOX LIBRARY
3 2768 00330029 4